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Reports on a 3-year (1956–59) experiment of the Chicago City Junior College in offering regular college courses for credit via open-circuit television on Chicago's educational television station.

Discusses the administration, enrollment, costs, achievement comparisons in controlled experiments, and special studies. Includes an evaluation of the television experiment by a panel of outside observers.

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FINAL REPORT
OF A THREE YEAR EXPERIMENT

Clifford G. Erickson
Dean of Televison Instruction

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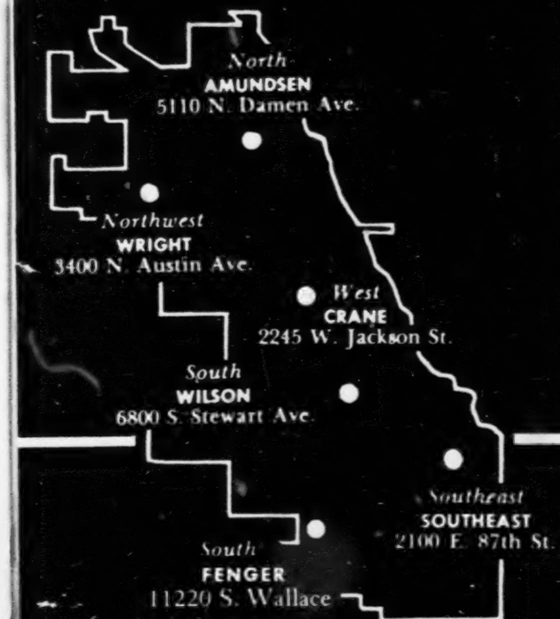
ED000 756

AUGUST, 1960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CHICAGO CITY JUNIOR COLLEGE

© Chicago Public Schools
Dr. Benjamin C. Willis
General Superintendent

Chicago City Junior College
Dr. Peter Masiko Jr.
Executive Dean

CHICAGO'S TV COLLEGE

FINAL REPORT
OF A THREE YEAR EXPERIMENT
OF THE CHICAGO CITY JUNIOR COLLEGE
IN OFFERING COLLEGE COURSES FOR CREDIT
VIA OPEN CIRCUIT TELEVISION

by

Clifford G. Erickson
Dean of Television Instruction

Hymen M. Chausow
Research Coordinator

August, 1960

Chicago City Junior College

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PREFACE ①

The three-year (1956-1959) experiment of the Chicago City Junior College in offering regular college courses for credit via open-circuit television on Chicago's educational television station WTTW-Channel 11 was a cooperative effort of many organizations and individuals.

The Fund for the Advancement of Education supported the experiment with a grant of $475,000 to the Chicago Board of Education. The Board of Education itself ~~spent~~ over $600,000 for TV College, the popular name for the experiment. ②

Members of the Board of Education, Dr. Benjamin C. Willis, General Superintendent of Schools, and Dr. Peter Masiko, Jr., Executive Dean of the Chicago City Junior College, constantly encouraged and supported the experiment.

The Board of Trustees of the Chicago Eudcational Broadcasting Association--owners and operators of station WTW-Channel 11--Dr. John W. Taylor, Executive Director of WTTW, and WTTW's skilled professional staff cooperated fully in the experiment. WTTW department heads James Robertson, Colby Lewis, Chalmers Marquis, Duane Weiss, and Edward Morris maintained continuous helpful liaison with the administrative and instructional staffs of TV College.

Dr. Max Engelhart, Director of the Division of Student Examinations, Chicago City Junior College, and his assistant Dr. Macklin Thomas gave invaluable assistance in conceiving and executing research designs and in developing evaluation instruments.

The deans and assistant-deans-in-charge, registrars, TV coordinators, counselors, department chairmen, control class teachers, and section teachers in all branches of the Chicago City Junior College assisted in devising and implementing new ways of organizing teachers and students for the television medium.

Mr. Robert Carolan, producer for TV College, provided the television teachers with extensive production support that made possible high standards of television instruction.

And, finally, the television teachers and alternates, all recruited from the faculties of the branches of the Chicago City Junior College, made a most significant contribution to the experiment through their professional devotion and their skill in adapting themselves to the new teaching situation. The following teaching teams participated in the three-year experiment (the first named in each team was the television teacher):

Fall 1956

English 101	Biology 101	Social Science 101	Political Science 223
Sumner Scott	Samuel Howe	Francis Gaul	Thomas Farr
James Zigerell	Frank Schubel	Meyer Weinberg	Harvey Karlen
Herbert Kalk	Orlando Ponzio	Ernest Liden	Edward Reinfranck

Spring 1957

English 101
Donald Thompson
Thomas Creswell

English 102
James Zigerell
Maxine Gordon

Biology 102
June Cordier
Valerie Krol

Social Science 102
Ernest Liden
Meyer Weinberg

Mathematics 101
Jerome Sachs
Florence Miller

Fall 1957

English 101
Donald Thompson

Mathematics 101
Jerome Sachs
Florence Miller

Humanities 201
Lester Cook
James Schroeter

Shorthand 120
Ruth Piette
Angela Sutherland

Biology 101
Samuel Howe

Physical Science 101
Irving Slutsky
Joseph Jerome

Accounting 101
James Miller
Bernard Tarshis

Psychology 201
Robert Cole

Slide Rule
Henry Patin

Spring 1958

Accounting 102
Joseph Goodman
Bernard Tarshis

Humanities 202
James Schroeter
Dorothy Patton

Physical Science 102
Joseph Jerome
Irving Slutsky

Shorthand 121
Angela Sutherland
Ruth Piette

Biology 102
June Cordier

English 102
James Zigerell

Political Science 221
Harvey Karlen

Social Science 101
Francis Gaul

Slide Rule
Henry Patin

Fall 1958

English 105
Thyra Vickery
Robert Powell

Humanities 201
Lester Cook

Literature 117
John Queenan
Carl Von Vogt

Psychology 207
Morris Haimowitz
Reuben Segel

Music 111
Dieter Kober
Richard Wang

Social Science 102
Ernest Liden

Physical Science 101
Irving Slutsky

Speech 141
Robert Johnston
Kenneth Jenks

Spring 1959

English 105
Thyra Vickery

Astronomy 201
Albert Shatzel
Forest Etheredge

Mathematics 103
Bernard Malina
James Gray

Psychology 207
Morris Haimowitz

Speech 141
Robert Johnston

Business 211
John Keefe
James Spiro

Russian 101
Irene Holoway
Irene Downey

Physical Science 102
Joseph Jerome

Humanities 202
James Schroeter

NOT-FOR-CREDIT SERIES, Spring 1959

Speak Spanish
Albert Donnell

College & Your Career
Clifford Erickson
James Jeanguenat

Pan-American Perspective
Concetta Rossetti

The substantial efforts and thorough cooperation of all these organizations and individuals during the three-year experiment enabled TV College to bring higher education of first quality into the homes of thousands of Chicagoland residents.

③ In June 1959, at the end of the three-year experiment, the Chicago Board of Education voted to continue TV College even without outside financial aid. By the spring of 1960, the Board of Education alone was underwriting the costs of TV College in presenting fifty-one periods of college instruction per week over station WTTW-Channel 11. The Board of Education has thus attested to the success of and indicated its confidence in the efforts and cooperation of those who contribute to TV College.

Clifford G. Erickson
Hymen M. Chausow
August, 1960

I. INTRODUCTION: STATEMENT OF THE EVALUATION PANEL

This is the third of three reports on an experiment conducted by the Chicago City Junior College in the use of open-circuit television as a means of offering college courses to residents of a metropolitan area. This report describes new directions which the experiment took in the third year, reports new experimental data, and presents other information not given in the first two reports.

It describes the day-to-day operation of the complex experiment, including administrative and instructional aspects. It gives statistics on enrollment and retention and on costs. It presents new conclusions derived from three years of experimentation and recommends lines of future experimentation.

Statements from two letters to Dr. Benjamin C. Willis, General Superintendent of Schools, provide a brief overview of the three-year experiment. One was written before the beginning of the experiment; the other, after its completion.

On May 8, 1956, Dr. Alvin C. Eurich, of the Fund for the Advancement of Education, in a letter to Dr. Willis, confirming an initial grant from the Fund to the Chicago Board of Education, summarized some of the experimentation that TV College was to undertake in the next three years:

> We understand that it is your desire to make a full study of the use of the television medium in improving the instructional program of the Chicago schools and extending educational opportunities to all of the citizens.
>
> According to our understanding you will begin this program by offering three or four general education courses over television for the first semester of the academic year 1956-57. For the second semester you will offer three or four different courses. It is your intention to add to this offering of courses for each successive semester so that by the end of the third year you will be offering approximately a full two-year program of general education at the college level.
>
> You will arrange the pre-test and post-test groups to compare learning effectiveness under various conditions. In addition, through item-analysis techniques, you hope to assess the effectiveness of television teaching in relation to various types of content, such as facts, attitudes, critical thinking, as well as formal subject fields.
>
> You propose to work out carefully with the agencies that are concerned with the matter the problem of accreditation of courses so that credits will be fully recognized.

At the close of the three years of experimentation, Dr. Willis invited a panel of distinguished educators representing the areas of higher education, evaluation, accreditation, and research in educational broadcasting to review the work of TV College. This committee consisted of Dr. Frederick L. Hovde, President, Purdue University; Dr. Henry Chauncey, President, Educational Testing Service; Dr. Norman Burns, Secretary, Commission on Colleges and Universities, North Central Association of Colleges and Secondary Schools; and Dr. Wilbur Schramm, Director, Institute for Communication Research, Stanford University.

In June 1960, this panel summarized its findings for Dr. Willis:

June 15, 1960

Dr. Benjamin C. Willis
General Superintendent of Schools
228 North LaSalle Street
Chicago 1, Illinois

Dear Dr. Willis:

We have looked with some care at the Chicago Public Schools' experiment in teaching a junior college curriculum by television. We have examined the research data, observed a number of programs, looked at examinations and study guides, and talked with persons representing all phases of the program.

Our conclusion is that the project has been conscientiously and competently conducted.

What the Experiment Shows

The experiment has demonstrated what the impact of a junior college on television can be in a metropolitan community, and it has helped to clarify the understanding of how instructional television can be most effectively used.

In some respects, the conclusions are not as expected, but they are no less important and useful than had been anticipated. We consider some of the more significant findings to be the following:

1. Courses at the junior college level can be taught effectively to a home audience by television. The results on this point were most impressive and convincing. Indeed, in the few cases where there were significant differences between the performance of home TV students and classroom face-to-face students, the differences were more often in favor of the TV students than the others.

2. When junior college work is offered on television, it brings into the educational system a new group of students--an older group (median age in the 30's), most of them housewives, who are strongly motivated to continue their education but have been kept from doing so by home and family duties. These students like and are grateful for television courses. Once started on higher education by television, they are likely to go on to a junior or senior college degree. Many of them are planning to become teachers. Obviously this is an important group to bring back into education.

3. We have noted with interest, however, that offering a curriculum like this by television does not necessarily reduce the strain on junior college facilities. Because it builds an appetite in the community for higher education, and because many of the new students will take part of their work in the classroom, part by TV, it may well have the net effect of requiring more classroom space and more teacher time, although, to be sure, it spreads existing facilities to take care of more students.

4. The cost of educating credit students by television, in the numbers registered in Chicago, is a little more than the cost of educating them in the classroom. If the registration could be increased by a fraction which may be as small as a third, the cost of TV teaching would compare favorably with the cost of classroom teaching. However, we urge that the utility of a junior college television curriculum not be decided solely on the basis of comparative costs.

The television courses are reaching a group of students most of whom would otherwise not take junior college work. It is serving a group of handicapped and otherwise restricted students. It is reaching a group of non-credit students, which averages several times the size of the group studying for credit. It is also reaching a group of casual viewers who are registered neither for credit nor without credit--an "eaves-dropping" audience about which we know very little but which is estimated to range from five to twenty-five thousand persons per program. In other words, it seems to us that offering junior college courses on television is a service to the city of Chicago far wider than the service to credit students.

5. Evidence of the high motivation of the TV students and the welcome given the TV courses is the fact that about 65 per cent of the television students finish their courses and take the final examinations. This completion rate is quite remarkable when compared with other forms of adult education for credit.

6. The experiment did not produce evidence to show that teen-age college students can be effectively taught exclusively by TV. It may be that these younger students need more direct contacts with the teacher. However, it is now quite clear that TV can be used as the main channel for teaching the more mature and more highly motivated students who are chiefly attracted to the home classes by television. Even in the case of these students, however, it is evident that completion and high quality work can be encouraged by mail-in assignments, trial tests, and the possibility of face-to-face conferences and telephone conference periods.

7. One of the more interesting things the project has demonstrated is that a highly competent junior college on TV can be planned, organized, and presented by a metropolitan junior college system, using only its own resources. We do not believe that every junior college could do what the Chicago junior colleges, backed by the resources of the public school system, have done, but many of them could certainly put a curriculum on TV. Those who plan to do so could profitably study the Chicago experience, for Chicago teachers and producers have done a prodigious job on what is, for television, a very low budget.

8. The project has demonstrated that an effective classroom teacher can learn to be an effective television teacher. But a good classroom teacher is not per se a good television teacher. Adapting the teaching situation to television requires preparation and creativity well beyond what is possible in the time usually allotted to classroom teaching. Practice, self-criticism, and a great deal of detailed planning are necessary before even an expert teacher can be effective on TV. Whether a so-called "television master-teacher" would have been more effective than these Chicago teachers is something the project did not study; but it is clear that the art of television teaching is not limited to a few great teacher-actors.

9. We have been impressed by the usefulness of skillfully made study guides, work books, and other devices as aids and complements to television teaching, and look forward to the time when teaching machines or similar devices can be used to guide the student's practice.

10. The experiment appears to have generated a healthful ferment throughout the junior college system in Chicago. The early fears of teachers that they might be superseded by a picture tube appear to have been mostly done away with. In their place has apparently come a new interest in stating clear course objectives, in using TV study guides in classrooms as well as home, in making better examinations, on the pattern of the examinations for TV students, and in the experience of television teaching. We note with interest that whereas at first it was difficult to get volunteers for TV teaching, now the applications greatly exceed the openings . . . .

It seems to us that a junior college on television has proved its usefulness in Chicago, and we notice with pleasure that the service is being continued beyond the three experimental years . . . .

We want to congratulate you most heartily on the conduct of your project, and on what it has accomplished.

Norman Burns
  Secretary, Commission on Colleges and Universities
  North Central Association of Colleges and Secondary Schools
Henry Chauncey
  President, Educational Testing Service
Frederick L. Hovde
  President, Purdue University
Wilbur Schramm
  Director, Institute for Communication Research, Stanford University

II. GENERAL CONCLUSIONS OF THE THREE-YEAR EXPERIMENT AND SUMMARIES OF SPECIFIC FINDINGS

A. General Conclusions

The results of the three-year Chicago City Junior College television experiment lead to several general conclusions:

1. Offering college courses for credit on open-circuit television in a metropolitan area will find a receptive audience of credit students who will be older and more highly motivated than normal college-age classroom students. Many of these students will be interested in completing degree requirements. Some prospective graduates will want to use telecourse instruction exclusively in meeting these requirements.
2. College courses can be presented successfully on open-circuit television without adjustment of primary objectives and learning materials.
3. Classroom standards of instruction and evaluation can be maintained for telecourses, and telecourse students can be awarded credit equal to that for classroom instruction.
4. Accrediting associations, professional associations, schools, and colleges will recognize the validity and transferability of college credits earned by television instruction.
5. The presentation of telecourses which are directed primarily to credit students will acquire, on the average, a not-for-credit enrollment three times the credit enrollment. The viewing audience for any given telecast will vary from twenty to fifty times the total of credit and not-for-credit enrollments.

B. Specific Findings

In addition to supporting these general conclusions, the three-year experiment produced many specific findings. For convenience, these are summarized here under the chapter headings of this report.

TV College in Action

1. The efforts of TV teachers and alternates, section and control teachers, TV coordinators, deans, registrars, counselors, the TV office staff, the examination and evaluation staff, and the studio staff were successfully coordinated to achieve an instructional program of high quality for the adults of Chicagoland.

2. In most cases, excellent classroom teachers who wished to participate learned to be effective television teachers. Prime requisites were demonstrated teaching skill, scholarship, personal and professional maturity, and ability to work cooperatively with others.
3. Responsibility for educational content best rested clearly with the teacher, though he could be receptive to suggestions from the producer, director, and other consultants who could help him achieve his educational goals.
4. Teachers seemed to work best with permissive yet competent counsel in orienting themselves to television teaching, in shaping objectives, in developing course and lesson plans, and in setting firm work deadlines which were based on accumulated experience in presentation of telecourses.
5. A clear statement of objectives in operational terms was a necessary antecedent to telecourse planning. This had an important bearing on choice of texts and learning materials, on assignments, on evaluation devices, and on any research design to make comparisons of achievements for several methods of instruction.
6. A printed telecourse study guide was a necessary device to provide guidance of learning between telecasts. Advance printing and distribution of schedules of conferences and examinations and other administrative data was also essential because telecasts were a relatively poor means for communicating detailed administrative information.
7. Three-credit-hour courses were offered successfully in three 30-minute broadcasts per week. (In the classroom, these courses are ordinarily offered in three 50-minute periods of instruction per week or some equivalent of this time allotment.)
8. Teaching effectiveness was often increased by audio-visual aids, which maximized educational use of the medium. But the role of the teacher was by no means minimized. He remained in view and controlled the learning materials whenever possible.
9. The television teachers presented controversial and sensitive material to the open-circuit audience in Chicago without difficulty. Their approach to this material was objective, scholarly, and devoid of sensationalism.
10. Telephone conference hours for television and section teachers proved to be a useful means of student-teacher intercommunication.

11. The amount of supporting face-to-face instruction required was related to course objectives. Foreign language telecourses were supported with eight bi-weekly two-hour section meetings for conversational drill and evaluation. "Content" courses were supported by four section meetings: two one-hour conferences and two one-hour mid-term examinations.

12. Adapting instruction to the opportunities and limitations of the television medium required preparation and creativity well beyond that permitted by the usual allotments of time for classroom teaching.

13. Efforts to sensitize management in business and industry to the value of relating TV College to a company training program had relatively little success.

Enrollment and Retention

14. The average credit enrollment per semester was 1,261 persons for 2,321 course registrations, equivalent to a full-time enrollment of 456 college students. A conventional college would have required a professional staff of at least twenty-five and a building of moderate size to render an equal service. Credit students averaged 1.84 courses via television per semester.

15. The average not-for-credit enrollment per semester was 3,550 individuals for 5,521 course registrations or an average of 1.56 courses per student.

16. Enrollments declined sharply when a course was repeated too soon after the first offering. A delay of three to four semesters was needed to reach a normal demand except in those courses required for graduation.

17. On the average 66.5% of the original credit enrollees completed all course work and received a grade.

18. Retention in a given course was raised by an increase in the interaction of students with learning materials and with teachers through mail-in assignments, trial tests, face-to-face conferences, and telephone conference hours.

Costs: TV vs. Conventional Instruction

19. The cost per credit student of offering college instruction via television remained higher than classroom cost for an equal number of units of credit instruction. If, however, the additional educational service to not-for-credit students and regular not-enrolled viewers could have been measured, a unit cost much lower than classroom costs could have been assigned to that portion of the service received by credit students only.

20. Unit costs for offering telecourses varied with enrollment and type of course. Courses with objectives primarily of the "skill" type were usually more costly than courses with objectives primarily of the "content" type because they usually required more supporting face-to-face instruction and more grading of assignments and examinations and had smaller credit enrollments.

21. Centralization of enrollments of television students and of all conferences and examinations in two centers, one north and one south, made possible increased administrative and teaching efficiency and economy without a loss in enrollment or quality of learning and hence made possible a reduction in unit costs.

22. Increasing the number of courses from four in 1956 to nine in 1959 without a comparable increase in broadcast charges reduced the unit cost of broadcasting, but total enrollments did not grow with the increase in the number of courses to provide the expected overall reduction in unit costs.

Achievement Comparisons in Controlled Experiments

23. In the first year, achievement comparisons were made for three groups of students: the at-home television students receiving 30-minute telecasts, the conventional classroom students receiving 50-minute conventional lessons, and the classroom students receiving thirty minutes by telecast and twenty minutes of follow-up classroom instruction. In all subjects taught -- English, biology, social science, political science and mathematics -- the television experimental group showed higher achievement. In biology, the significance was at the 5% level favoring the TV student. In the other subjects, there were no significant differences among the groups.

24. In the second year, achievement comparisons were made primarily between TV-at-home and evening adult conventionally taught students. In accounting, English, social science, psychology, and shorthand there were no significant differences between the control and TV groups. Significant differences were found, favoring the TV group, in humanities, biology and, in one instance, physical science. These differences may be explained in part by the type of course, the population involved, and differences in instructors.

25. In the third year, variations were found in the comparisons of TV-at-home, TV-in-class, and control classes. The conventional control groups in Physical Science 101 and Humanities 202 were favored over TV-in-class groups at the 5% and 1% levels

respectively. In Child Psychology 207, Fundamentals of Speech 141, and Mathematics 103-College Algebra, TV-at-home groups were favored at the 5%, 1%, and 1% levels respectively in comparison with the control groups. In Social Science 102, Humanities 201, and Speech 141, TV-in-class and conventional day groups did not differ significantly.

Special Studies

26. Both credit students and not-for-credit home-viewing television students expressed positive attitudes to the open-circuit television offering of standard college courses. Even credit students who withdrew expressed positive attitudes and a willingness to re-register in TV College. Almost all would have recommended their courses to others. Attitudes remained unchanged during the course.

27. Students of college age in TV-in-class sections had slightly positive attitudes in the beginning of a course, but this tended to shift to slightly negative by the end of the course. They were undecided about recommending the course to others.

28. Home television and classroom conventional control students did about the same amount of supplementary reading. Note-taking practices were the same for the two methods of instruction, though in both cases the practices varied with the subject.

29. Faculty acceptance of television as an educational tool grew steadily. Teacher enthusiasm seemed to grow with the amount of involvement in telecourse preparation, presentation, or supporting instruction.

30. Study of student personal data showed that TV College served many who otherwise would not have begun higher education. Many were home-makers--mothers of teen-age children--who began collegiate level work with plans for becoming teachers.

31. Two-thirds of the adults who enrolled for credit in television courses intended to pursue academic work leading to an Associate in Arts degree. One out of three was interested in becoming a teacher.

32. Two-thirds of credit registrants were women. The average age of all students varied from 32 to 35 years.

33. Television instruction made possible special educational service to inmates of two prisons, a relatively large number of handicapped persons, and gifted high school seniors working for advanced college credit.

III. TV COLLEGE IN ACTION

A. Administration of TV College

From its inception in 1956, TV College has operated as part of the Chicago City Junior College. The Chicago City Junior College, ccredited by the North Central Association of Colleges and Secondary Schools, has six branches serving major areas of the city with a common catalog of offerings. The administration of the multi-branch institution is coordinated by an executive dean who is responsible to the General Superintendent of Schools. Each branch, under a dean or assistant-dean-in-charge, adjusts its offering to the educational needs of its students and its community.

TV College has operated entirely within this system. Television teachers have been selected from among the regularly assigned full-time faculty of the City Junior College and have presented courses regularly offered in the Junior College classrooms. Television students have registered as students in the six branches, meeting the same admission requirements and placement test standards as students registering for classroom work.

The new and unique responsibilities relating to the use of television have been assigned to a dean of television instruction, who is responsible to the executive dean. The dean of television instruction has a staff that includes a professional assistant with special training and experience in curriculum, evaluation, and research, a television producer with training and experience in educational broadcasting, two full-time stenographer-clerks, and several student aides to assist in television production and in the mailing room.

The responsibilities of the dean of television instruction have included the following:

1. Developing policies and procedures which integrate TV College into the total service of the Chicago City Junior College.
2. Selecting television courses and television teachers and orienting teachers to the new medium.
3. Providing assistance to television teachers in defining course objectives, in selecting learning materials, in developing telecourse and lesson outlines, in writing telecourse study guides, and in preparing valid and reliable evaluation instruments.
4. Providing production assistance to television teachers and liaison with the staff of WTTW (owned and operated by the Chicago Educational Television Association).
5. Developing and coordinating procedures and materials for registration, section instruction, and other services for television credit students in the several branches.
6. Developing and executing continuing promotional plans, including direct mail

announcement folders, press, radio and television releases, and "preview" telecasts on WTTW.

7. Supervising direct mail registration of not-for-credit students, mailing study guides, and maintaining records of these new services in informal adult education.
8. Directing and coordinating experimentation and research and reporting and publishing findings for use by the faculty and by others with professional interests related to teaching and broadcasting.

Many of these responsibilities are more completely defined in the sections that follow, where they are presented in the context of the total operation of TV College during the three-year experiment from 1956 to 1959.

B. Selection and Scheduling of Courses

The selection of courses during the three-year experiment was based on Chicago City Junior College graduation requirements, special community interests, research demands of the experiment itself, and, in later stages, costs.

In each semester, two or three required general education courses were included to serve the considerable percentage of enrollees who indicated a desire to graduate. (City Junior College requirements for an Associate in Arts degree include one-year courses in each of five areas--English Composition, Social Science, Humanities, Physical Science, and Biology--for a total of thirty semester hours.) Additional elective courses were selected to provide maximum service to the larger special-interest student body and at the same time meet the needs of the graduation-bound students.

During the three-year experiment, the office of the dean of television instruction utilized a variety of methods of securing information concerning desirable elective offerings. These included surveys of course interests of credit and not-for-credit students, surveys of curriculum choices of enrolled credit students, analysis of recommended electives in the curricula most frequently elected by classroom students, analysis of electives of most popular curricula as determined by choices of enrolled credit television students, the securing and summarizing of applications from teachers for the teaching of specific telecourses, the securing and summarizing of recommendations for telecourse offerings by administrators and teachers, surveys of opinions of personnel directors and training directors in industry, and intuitive judgments of administrators on the probable enrollment response to specific courses when offered by the unique means of television instruction. The gathering of this information did not make the choice of elective courses easy. Experience showed that enrollments and reactions could not be easily predicted by experiences in classroom instruction and classroom enrollment. Some television electives had a large not-for-credit following and a small credit enrollment. Others had the reverse.

During the experiment, courses were also selected as part of a deliberate research program to measure the success of TV instruction in a variety of course areas, including skill subjects such as mathematics, modern language, public speaking, and English.

In later stages of the experiment, costs influenced the selection of courses. Second semester courses in one-year elective sequences had reduced enrollments and, therefore, higher unit costs. Consequently, in the third year of the experiment, only the first semesters of one-year sequences were offered. Television students were asked to complete these sequences in classroom courses in one of the six branches, all of which had well-developed evening programs of classroom instruction.

The scheduling of courses was based on the availability of broadcast hours--TV College offerings were presented over the facilities of WTTW-Channel 11, Chicago's Educational television station, and had to fit into the total educational program of the station--and on other factors such as enrollment tendencies, efficient use of the faculty, and possibilities of using kinescope recordings. Since second-semester courses of one-year required-course sequences had smaller enrollments than first-semester courses, first-semester courses were offered in both fall and spring. In this way, the normal midyear drop in total enrollment was lessened.

Also, course schedules were arranged to create the minimum disruption of usual faculty assignments in the various branches and in individual departments. For example, in the first draft of plans for the fall 1958 semester, four of the courses would have been in the social science field, and three of the teachers selected for these courses would have been members of the Wright Branch faculty. The course offerings for several semesters were consequently altered to distribute the Wright Social Science Department TV load over several semesters.

The planning of the course schedule also took into account the possibility of re-use of kinescope-recorded courses.[1] The use of recordings made more broadcasting possible by reducing the burden of production of live broadcasting in a given semester and by reducing costs. The cost of presenting a recorded course was about one-third that of presenting a live course. Recordings were used both to provide day and evening series in one semester--a live broadcast in one series followed by its recording a week later in the other series--and to repeat a course in a later semester. In repeating courses, a delay of at least one year produced higher enrollments.

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[1] During the three years of the experiment (1956-1959), only kinescope recordings were used. After February 1960, in TV College's fourth year, video-tape recordings were also used.

The application of the principles used in selecting and scheduling courses in the three-year experiment is partially illustrated by the following general program by course areas for the two-year period 1960-1962:

Required courses: Three each semester
Pre-teaching electives: One or two each semester
Modern Language: One each semester
Business: One each semester
Courses with cultural interest: One each semester
Courses in special interest fields: One each semester

Courses with cultural interest include philosopy, literature, sociology, and history. Special interest fields include electronics, first aid, and reading improvement.

C. Selection of Instructors

From the beginning it was assumed that the television teachers should be experienced members of the regular faculty of the Chicago City Junior College. A background of classroom experience in the Junior College would bring understanding of institutional objectives, knowledge of the student body, rapport with the administrative organization, and appreciation of the goals of the experiment.

In the fall of 1956, four courses were offered--three general courses and one elective. For each of these four courses, teams of three teachers were selected from among applicants. Each of the three team members was regarded as a potential television teacher or a supporting teacher. Work began in late June 1956 with each team formulating plans for a telecourse and each teacher getting studio experience for orientation. Each teacher made several kinescopes which were later evaluated by the teacher and his colleagues. The teachers declared that this experience proved to be invaluable and expressed regret that they had not had such self-evaluation experience earlier in their teaching careers.

After one month of work, one member of each team was selected as the television teacher on the basis of studio auditions and observations of his scholarship in course planning and his skill as a member of the teaching team. A second member was selected as an alternate TV teacher. The third team member assisted the others in preparing the telecourse study guide and lesson plans for telecasts and then returned to normal classroom duties at the close of the preparation period.

For the preparation of the spring and fall courses in 1957, the teaching-preparation team was reduced to two members. This reduction improved decision making and reduced preparation costs. Some teams, even of two members, could not agree on essential aspects of course objectives, organization, or presentation. In these cases, it was necessary to make an early selection of the TV teacher and permit him to continue the creative preparation alone. In these cases, the alternate teacher was asked to accept the course outline and plans of the TV teacher.

In the spring of 1958, the fourth semester of the experiment, a number of courses were prepared and presented each by a single teacher. In some cases, the television teacher also carried the burden of coordinating the section instruction program in the several branches, a duty formerly given to an alternate.

The experience of the first two years led to a new plan for the selection of the TV teams for the third year. One teacher was selected to prepare and present the television course. As the time for the semester presentation approached, he recommended an alternate teacher, ordinarily a person from his own branch faculty with whom he had already cooperated in preparing classroom course material. Whenever possible, the alternate teacher also taught a control class and/or served as a section instructor for a TV section.

Since one of the prerequisites for successful television teaching was a desire to explore the new medium, television teachers were selected from among volunteers. A number of months prior to the offering of a telecourse, applications were accepted from members of the faculties of the six branches of the City Junior College. (A sample request form is included in Appendix 3.) More courses were announced than would be presented in order to yield a measure of flexibility in the final selection of courses and instructors, and teachers were asked to recommend additional courses. The number of competent teachers who volunteered for television teaching was gratifying. Moreover, teachers showed excellent judgment in recommending courses and teachers for television presentation.

These applications were received by the dean of television instruction. He first made the final selection of courses, presenting a balanced program offering, and then selected the teachers, planning the course schedule to avoid concentrating the teachers in any one department or branch in any one semester. In making the selections of teachers, he secured the counsel of the deans of the branches and of other advisers.

Making the selections was not easy. A television teacher had to have the personal and professional abilities that would enable him to assume the new and complex role of studio teaching. He became a member of a team representing several faculties, several departments, perhaps several professional points of view. He moved into a new kind of teacher-pupil relationship--the impersonal, yet intimate, relationship of TV. His classroom now had no walls; his audience included colleagues in other departments and the community at large. He entered into a cooperative relationship with TV section teachers and control class teachers. He was the central figure in decisions on objectives, materials, evaluation, and grading. His presentations were filtered through a producer, director, and technical staff.

The factors used in selection of television teachers included scholarship, demonstrated teaching skill, professional and personal maturity, ability to work cooperatively with others, creativity in curriculum planning and writing, and teaching experience in the field in the local institution. In one course, Russian language, the lack of previous experience of the television teacher was offset by assigning an experienced teacher of another language as a consultant in foreign language teaching and as an assistant in planning the telecourse and writing the teleclass study guide.

As the number of TV teachers increased with each succeeding semester, faculty attitudes towards TV College became more favorable. In each semester, over 100 instructors were involved in a variety of roles. Great care was taken in conducting and reporting controlled experiments to assure faculty members that administrators were regarding the TV medium with objectivity. Some teachers who had earlier claimed that their courses could not be taught by television changed their beliefs as they became involved later in experimental and control situations.

D. Preparation of Courses

The orientation of the television teachers to the new medium began at least three months prior to broadcasting. After a conference with the dean of television instruction, the teachers were introduced to the producer, who assisted them in making a smooth transition from classroom to television.

The producer arranged the following steps in orientation:

1. A tour of the studio with observation of TV College lessons in preparation and in live presentation.
2. The preparation and presentation of a five-minute segment of course material, selected by the teacher, for closed-circuit kinescope recording.
3. Self-evaluation of the kinescope and critique discussion with the producer.
4. The preparation and presentation of an additional ten-minute segment of course material for closed-circuit kinescope recording.
5. Self-evaluation of this kinescope and critique discussion with the producer.
6. Presentation of a full lesson on closed circuit to give the instructor an opportunity to learn something about the pacing of a television lesson and to provide him with some idea of the setting needed for a telecast, thus giving him background for the work of outlining telecasts.

Group conferences with the new television teachers helped to clarify the many new roles which they had to assume and provided guidance in the many new procedures in coordinating television sections, research designs, and the like. In all cases, policies and procedures were presented in writing, but they were clarified by face-to-face discussion. Many individual conferences were necessary to work out problems which were unique to given teachers or courses. Experience indicated that it was unwise to develop an entirely new course and adapt it to television in one step. A wiser plan was to adapt to television a course which already had been tested in great part by classroom teaching.

During the preparation period--the equivalent of eight weeks of full-time work--the television teachers had to meet a series of deadlines to insure adequate preparation of the course outline, of the teleclass study guide, and of lesson plans before broadcast time. The first deadline was for a statement of four or five main course objectives with a paragraph expanding the meaning of each objective. Explicit and concrete statements of course objectives were needed as a guide for selecting and organizing learning experiences, including assignments, and for devising means of evaluating student progress.

In the preparation of these statements of objectives, one of the great values of TV College to the City Junior College as a whole became apparent. Under the usual conditions of a full-time teaching load, a teacher seldom has time to make an explicit formulation of objectives for a course. The course tends to develop as he teaches it, following a vague outline of implicit objectives and often taking part of its shape from available textbooks and materials. Even multi-section courses developed by committees of teachers often evolve similarly, representing the results of collective past practice rather than the results of extensive theoretical planning. Also, since college teachers are usually content specialists, both by training and by interest, their courses tend to develop around organizing principles related to specific elements of content rather than around principles derived from broader behavioral goals.

But a teacher selected to prepare a TV College course was free to spend all of his efforts for eight weeks in thinking out a single course. For most of the teachers this was the first time in their careers that they had had such an opportunity. In addition, they had the counsel and assistance of the curriculum expert on the staff of TV College, a person who was trained in the principles of formulating objectives and selecting and organizing learning experiences and whose interest in behavioral goals of instruction perfectly balanced the teachers' content biases. Many TV teachers felt that the opportunity given them by TV College in planning and presenting a single course was of inestimable value in their subsequent classroom teaching. Many teachers who had not been directly involved in TV courses felt that they, too, benefited from the work that their television colleagues had done.

With time and expert assistance available to them, the television teachers developed considerable skill in formulating statements of objectives. Early drafts of such statements often were too content-oriented, as in a mere listing of content-unit headings, too limited in behavioral type, tending usually to be the type involving recall of information, too much in terms of what the instructor was going to do rather than in terms of the behavioral changes desired in the student, and too general to have the same specific meanings for different instructors. But by the time of the deadline for these statements, the teachers were able to formulate objectives in terms of behavioral changes as well as content elements and in terms of attitudes, appreciations, and abilities as well as knowledge or recall of information. Many teachers became aware of the importance of critical thinking as a major objective. In addition, the teachers were able to qualify these statements in terms specific enough to indicate appropriate procedures to section teachers and control-class teachers and to aid the TV teacher himself in selecting and organizing learning experiences and in constructing pretest, mid-term, and final examination exercises.

The second deadline that the television teacher had to meet in the preparation of his course was for the outline of telecast topics, the selection of textbooks and other student materials, and the selection of published materials and audio-visual aids to be used in the broadcast lessons. The outline and booklist were to be included in the promotional folder which was to be mailed several weeks before the opening of the broadcasts. Also, publishers had to be contacted to ascertain the availability of supplies to satisfy the expected demand. Cooperating bookstores had to be advised of adoptions of books, equipment, and materials so that they could stock their shelves before registration. And copyright holders had to be contacted to secure permission for use of published books, articles, films, and audio-visual aids which were to be used on a broadcast. Royalties had to be arranged when necessary.

The third deadline was for the preparation of a plan for assignments, conferences, examinations, and telephone conference hours. The television medium was relatively inefficient for communicating information relating to assignments, examinations, and the like. It was found far more effective to include all of this information in a bulletin distributed to credit students at the time of registration. This required advance planning to complete preparation and printing prior to registration. Circulating drafts of these bulletins to all persons involved, including the TV teachers, was an effective means of discovering desirable modifications and serious errors.

The fourth deadline was for the development of research designs and appropriate instruments to be used in controlled experiments. A basic plan was decided upon with the guidance of the coordinator of research, and pretests or questionnaires were constructed to be used in matching or checking the equivalence of control and experimental groups.

The fifth and final deadline was for the preparation of the teleclass study guide. Every student was provided with a study guide from thirty to a hundred pages in length. From the inception of TV College, the study guide was regarded as a means of integrating the televised instruction, the textbook, and the collateral readings and assignments into unified learning experiences for the TV student. Most of the guides followed a similar format, which included the following:

1. An orientation to effective learning via television.
2. A statement of objectives for the course.
3. An outline of the course.
4. A list of required readings, collateral readings, and other reference materials.
5. Sample test items and progress tests to acquaint the student with the type of examination to be used.
6. Clear statements of assignments and due dates.

7. Extracts of important readings which might be out of print or difficult for students to obtain.
8. A list of community agencies where related information was available.
9. Workbook materials, which were sometimes used as mail-in assignments.
10. Evaluation or reaction forms.
11. Coupons for convenient purchase of allied learning materials or subscriptions for related periodicals or magazines. (In some instances, special offers were arranged with publishers.)
12. Charts, forms, or diagrams useful as bases for TV lessons in providing common material for the teacher and the student. (Notable examples of such materials were those distributed in the TV accounting and music courses.)

After the completion of the study guide, the instructor started to prepare the first ten or twelve telecasts. Several weeks before the first telecast, he began intensive work with his producer. About a week before the first telecast, he had a dress rehearsal of this telecast. All preparations for this rehearsal simulated the actual broadcast, but the signal was monitored only in a closed circuit within the studios. This gave the teacher, the producer, the director, and other personnel an opportunity to work together and to make suggestions for improving the studio situation and the presentation of the first lesson.

During the week or two before the first telecast, each instructor was a guest on a series of thirty-minute telecasts entitled TV College Previews. These broadcasts served to explain the unique service of TV College and to encourage enrollment in the new courses. Each teacher described briefly the purposes of his course and the types of persons who would find it useful and answered questions designed to exhibit his competence and interesting qualities as a person and teacher.

E. Preparation of Examinations

During the semester of the presentation of the course, the television teacher was constantly involved in preparing evaluation instruments for his course. Each course usually had two midterm examinations and one final examination. The TV teacher had the responsibility of seeing that these examinations reliably measured the objectives of his course.

As in the case of formulating course objectives, the teachers had had little previous opportunity in their careers to study and acquire skill in using the many evaluation techniques for a wide variety of objectives. Early efforts in test construction showed the following deficiencies:

1. Items primarily of the factual or informational type, touching on only one of several objectives for the course.
2. Essay questions very general in nature with loosely defined criteria for evaluation and inadequate instructions for response.
3. True-false questions in preference to items with lower chance factors, often ambiguously worded or in such form as to "give away" the answer.
4. Items with a low discrimination, i.e., items which did not discriminate between "good" and "poor" students.
5. Items of inappropriate difficulty, making the examination too easy or too difficult.
6. Lack of variety in types of objective questions, e. g., excessive use of the four-option multiple-choice type of question without reference to paragraphs, charts, or problems.
7. Poor wording and format of the item stem and options--failure to state the problem in the stem and to make options short, plausible, parallel, and grammatically correct completions of the stem.

Again, as in the case of formulating objectives, the availability of time for considering the problems of constructing evaluation instruments and expert advice and assistance both from the curriculum expert on the staff of TV College and from the Division of Student Examinations enabled the television teacher to acquire considerable skill in test construction. His later efforts produced tests with items distributed evenly over the major objectives of the course, with a variety of types of objective questions, and with simple, clear instructions for responses. Essay tests had clear criteria for evaluation. He also was able to use item-option analyses to determine the difficulty and discrimination of items and, when possible, administered the test to trial groups in advance to make item analyses and to improve items showing poor difficulty and discrimination. Again, TV College provided teachers opportunities for professional improvement that benefited both them and their colleagues in subsequent classroom teaching.

The Division of Student Examinations provided indispensable service to TV College in the preparation and administration of examinations. The Division was established in 1935 as part of the Chicago City Junior College, and since then has provided professional assistance to the various departments of the Junior College in preparing placement tests and final examinations, especially in the general education areas. Such an organization was essential for the television experiment. It provided consultant service to teachers in the refinement of the test items to improve their form and content and to insure consistency with the objectives of the course and with good evaluation procedures. It handled the final editing, printing and distribution of examinations, the machine scoring and item analysis of objective examinations, the tabulation of frequency distributions of scores, and statistical analyses of the achievement of TV and control students.

F. Presentation of Courses

The actual presentation of a telecourse required the coordinated efforts of many persons in addition to the technical staff at WTTW--TV coordinators, control class teachers, TV-in-class teachers, section teachers, an alternate, a producer, and, of course, a TV teacher.

In each branch of the Chicago City Junior College in which television students were registered, one of the administrative officers of the branch served as TV coordinator. He acted as liaison between his branch and TV college, making certain that all information bulletins from the office of the dean of television instruction reached the appropriate people in his branch and that class enrollment figures, names of section teachers, etc., were sent to the television office. He supervised the setting up of experimental and control classes in his branch and made sure that necessary research data were gathered completely and accurately. He assigned rooms for the TV conference and examination sessions and made arrangements for TV viewing rooms for students taking courses immediately preceeding or following these sessions. He scheduled make-up examinations for students who had conflicts between sessions or who were absent with good reason. In addition to his other coordinating duties, the TV coordinator at the Wright Branch was in charge of handicapped and special students.

When a telecourse was part of an experiment, some regular teachers in the branches of the Junior College taught conventional control classes. These control class teachers agreed with the TV teacher on the course objectives, followed the course outline indicated by him, prepared examinations jointly with him, and gathered research data needed for the experiment. In all other respects, they handled their classes in their normal manner. In some cases, usually when the telecourse was being presented by kinescope, the TV teacher himself served as a control class teacher.

When experimentation involved evaluation of TV-in-class instruction, some regular teachers handled these special classes. These TV-in-class teachers did not use their normal methods but instead followed whatever special plan had been agreed upon at the beginning of the experiment. Except for taking daily attendance, they functioned more like TV section teachers than like conventional or control class teachers.

For each telecourse, teachers in each branch in which television students were registered served as TV section teachers. Each section teacher was in immediate charge of a group of TV-at-home students. He maintained a class list for these students and recorded withdrawals. He graded examinations and mail-in assignments according to the instructions of the TV teacher and recorded these grades. He met his group at the conference and examination sessions and held telephone conference hours to answer individual questions concerning assignments, examinations, and grades. He derived final grades and entered them on the class lists. He gathered research data for experiments and was available to the TV teacher for consultation concerning general student problems. In many cases, even when the telecourses were being presented live, TV teachers acted as section teachers in order to have immediate contact with student problems and performances.

Whenever a telecourse was being presented live, one teacher acted as alternate to the TV teacher. In the early semesters of TV college, the alternate gave from three to six telecasts in order to give the TV teacher a rest and time to prepare later telecasts. In later semesters, this practice was discontinued, leaving the TV teacher to do all the telecasts. The alternate was available on twenty-four hour notice to present a telecast if illness or other emergency prevented the TV teacher from performing. (However, during the entire three years of the TV College experiment, there was not a single instance of a TV teacher failing to give a scheduled broadcast. Many TV teachers attributed this remarkable record of health and stamina to their relative isolation--they did not have daily contact with large numbers of students and in many cases had less than normal contact with their colleagues.)

In addition to serving as a substitute and a stand-by, the alternate was available to the TV teacher for consultation. Usually he watched the telecasts in order to offer critical suggestions to the TV teacher. He also helped coordinate the work of the section, control class, and TV-in-class teachers. Often he also served as a section or control class teacher.

In TV College's first year, two persons acted as producers. Thereafter, one person served as a full-time producer for all TV College presentations. The producer conferred with the TV teachers concerning audio-visual aids, such as art work, slides, films, photographs, etc., needed for telecasts and made arrangements to obtain them in time for the appropriate lessons. He offered the teachers suggestions for solving special problems of presenting certain types of courses or lessons and designed or procured special studio props.

For example, Shorthand needed a lined blackboard of limited depth, since the teacher could not write characters easily on a blackboard much above or below shoulder height. The producer designed a three-faced blackboard, rotating on a horizontal axis, that provided maximum writing space within a limited range of height. For Music, he attached a blackboard to the piano music rack so that the teacher could write without getting up from the piano. For Accounting, he obtained blow-ups of each page in the students' workbook so that the teacher could demonstrate before the camera on an exact duplicate of the paper the students were working on at home.

In addition to arranging for studio props and audio-visual aids, the producer conducted a complete rehearsal of each lesson about three weeks before it was to be telecast. This rehearsal was without camera but with simulated studio conditions. It gave both the producer and the TV teacher assurance that the lesson was ready, it enabled the TV teacher to time the presentation of various parts of the lesson under studio conditions, and it provided the producer a final check of all audio-visual materials that would be needed for the lesson. It also enabled him to plot the movements of the teacher and the sequence of audio-visual materials for the information of the studio director.

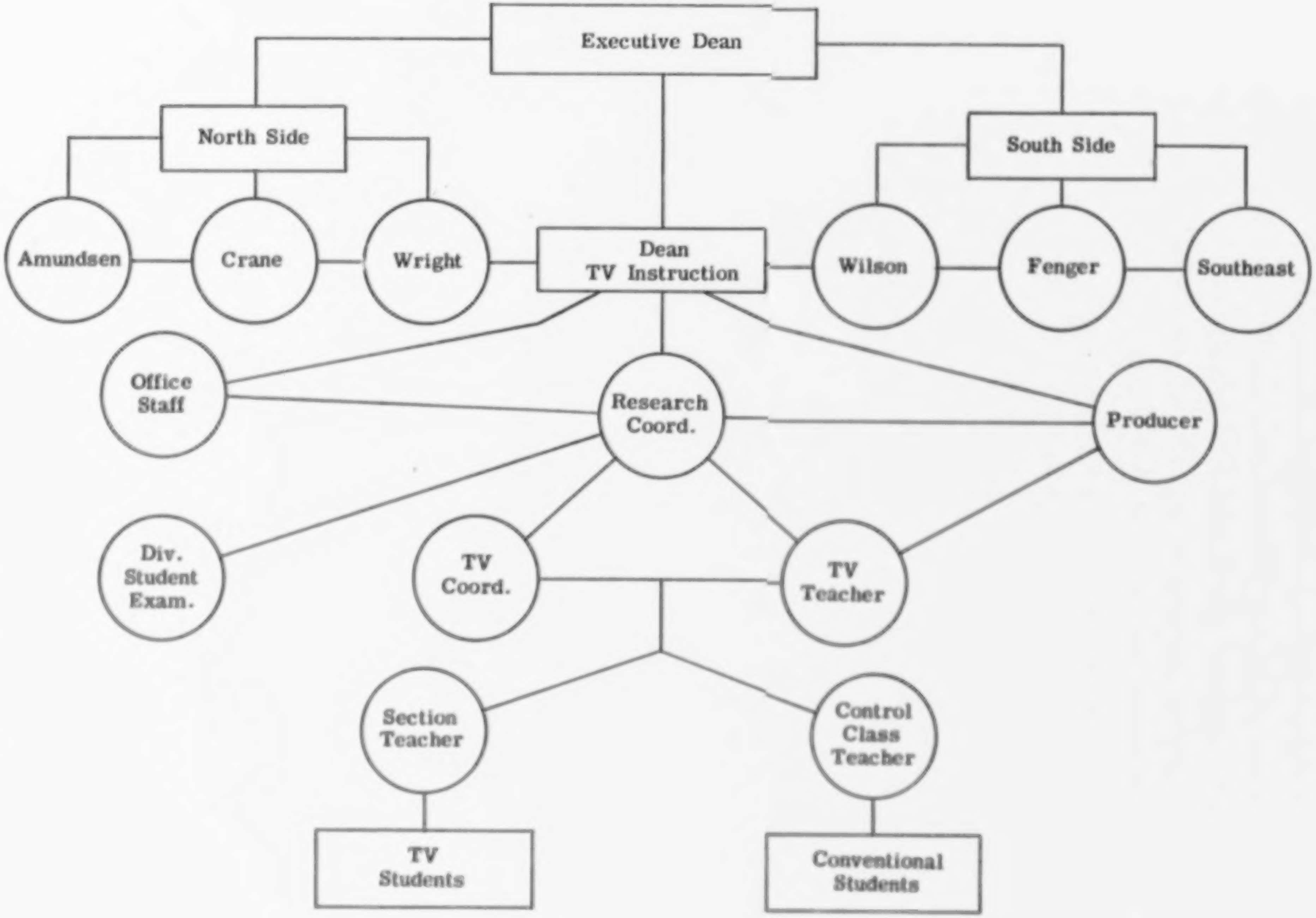
When kinescope recordings were being made, the producer had to review each kinesc to make sure that it was technically satisfactory. Whenever it was not, he had to arrange with the teacher and the studio staff for a remake. Whenever a course was being presented by kinescope recordings, he had to make sure that the kinescopes had all been properly edited and were otherwise ready for use.

Finally, there was the TV teacher. Whether his course was being presented live or by kinescope, each TV teacher was the focus of the activities of all the other persons involved in his course and in the experimentation connected with it. He coordinated the grading of mail-in assignments and examinations (many TV teachers actually served as section teachers) and gave instructions for section conferences, indicating questions to be expected and suggesting topics to be reviewed. He outlined the work of control class and TV-in-class teachers. He had telephone conference hours of his own to answer student questions concerning the telecasts.

Of course, during the semester of live presentation of a course, the TV teacher was directly responsible for each telecast. During the three years of the experiment, each three-semester-hour course was presented in three thirty-minute lessons per week. The TV teacher prepared and presented the lectures or demonstrations for these lessons. TV teachers found that they did not have to restrict their material for public consumption. With an attitude of scholarly objectivity, they discussed topics such as political disputes, racial discrimination, biological and psychological aspects of sex, and the affairs of Emma Bovary without arousing unfavorable reaction among the TV audience.

The TV teacher himself arranged for guests that he was to interview and for members of panel discussions. In Child Psychology, the teacher often had children in the studio so that TV viewers could observe many of the behavior phenomena he was discussing. When a TV teacher used audio-visual materials in a lesson, he usually preferred to handle them himself as much as possible so that he could always be sure what was going before the camera next and so that he could take advantage of any sudden inspiration for a new way of clarifying a point.

ORGANIZATIONAL CHART
TV COLLEGE
CHICAGO CITY JUNIOR COLLEGE


Executive Dean
North Side
South Side
Amundsen
Crane
Wright
Dean TV Instruction
Wilson
Fenger
Southeast
Office Staff
Research Coord.
Producer
Div. Student Exam.
TV Coord.
TV Teacher
Section Teacher
Control Class Teacher
TV Students
Conventional Students

G. Teaching-Time Allowances for Telecourses

An indication of the evolution of practice in assigning teaching time for the preparation and presentation of telecourses and the coordination of instruction and research is shown in Table 1, which compares the time allowed for telecourse preparation and presentation in fall 1956 with that for spring 1959. All references are to a three-hour course for one semester, and fractions are of the equivalent of a full-time teacher for one semester. A full-time teacher in the Chicago City Junior College normally teaches five three-hour courses per semester.

TABLE 1

COMPARISON OF TELECOURSE PREPARATION AND PRESENTATION TEACHING-TIME ALLOWANCES FOR ONE THREE-SEMESTER-HOUR TELECOURSE FALL 1956 WITH SPRING 1959

	PREPARATION	PRESENTATION	TOTAL
Fall 1956	3 teachers @ 2/5 = 6/5	TV teacher = 5/5 Alternate = 3/5	2 12/15
Spring 1959	1 teacher @ 2/5	TV teacher = 5/5 Alternate = 1/15	1 7/15
Reduction in Total Time 1956-59	4/5 teacher	8/15 teacher	1 1/3 teachers

Table 1 shows a reduction in time assigned for preparation and presentation of telecourses totaling 1 1/3 full-time teachers for one semester. These changes were made without reduction of the standards of instruction initially established.

During the experiment, there was considerable variation from subject to subject in class size and plan of organization of TV sections. Teachers assigned to TV sections were given loads which varied with the subject because of the variation in the number of student contacts and in the paper grading burden. Table 2 compares high and low TV section loads with classroom loads.

English section loads in TV courses were very close to classroom teaching loads. This was due to the fact that each theme had to be annotated and graded. The classroom teacher could sometimes use class discussion for common errors and thereby reduce the burden of written annotations, but this same convenience was not always possible with TV sections. In non-skill subjects such as psychology and political science, as many as three sections could be handled in a load assignment equivalent to one classroom section.

TABLE 2
COMPARISON OF TEACHING LOADS FOR TV SECTIONS WITH LOADS FOR CONVENTIONAL INSTRUCTION BY SUBJECT

	TV SECTION	CLASSROOM SECTION
English	35 students = 1/5 full teaching load	25 students = 1/5 full teaching load
Non-Skill Electives	50 students = 1/15 full teaching load	20 to 45 students = 1/5 full teaching load

Individual television section-teacher loads in each subject were virtually unchanged in three years of development. Overall economies were effected, however, in the third year by centralizing all evening section meetings in two branches, one north (Wright) and one south (Wilson). Formerly the necessity of providing day and evening sections in all six branches made necessary the assignment of section teachers to many small sections. Centralizing sections in two centers simplified the assignment of teachers and insured adequate section sizes. It also made it possible to assign one teacher to two sections, one meeting early and the other late on the same evening. This reduced commuting time for the teacher, simplified communication between the television teacher and section teachers, and eased the problem of making room assignments for TV section conferences.

H. Communication between Students and Teachers

One question of concern to many teachers was the extent to which the students could communicate with the instructor. One of the apparent limitations of television instruction is the one-way communication during broadcast time. A number of techniques were utilized to overcome this difficulty.

The basic means of student interaction with course objectives in television instruction, as in the classroom, were the learning materials--telecasts, readings, assignments--organized by the teacher. As the student was involved in these, he progressed toward the outcomes of the course. For example, in Social Science, assignments were devised to give students experience in identifying main ideas, locating basic assumptions, evaluating evidence, drawing warranted conclusions, and relating collateral readings to more central materials--the behaviors involved in the objective of critical thinking.

An important means of establishing communication between the students and the teacher was the reviewing of examples of student work. For example, in Fundamentals of Music, the study guide included a series of mail-in worksheets, one for each telecast. Each worksheet was a self-mailer permitting the student to prepare and stamp the tri-fold sheet in advance for return mailing by the teacher. The assignments were mailed after each telecast and were checked and returned within one week. These worksheet assignments dealt with the key concepts and ideas of the telecast and reading materials. As the worksheets were received by the television graders, the TV teacher sampled them and read the comments of the graders to determine which of the concepts or skills were most misunderstood. Subsequent telecasts were used for review based on these samplings. Thus, throughout the course there was constant interaction between student learning materials and the instructor through the device of sampling mail-in assignments and using these data to guide television teaching.[1]

Another means of communication between the students and the television teacher and section teacher was telephone conference hours. Two telephone conference hours per week for each television instructor were announced at the beginning of the semester. Students appreciated the scheduling of one of these hours immediately after a telecast period. A telephone conference hour soon after a telecast gave the puzzled student an opportunity for clarification. It also gave the instructor a reaction which helped him determine which concepts needed more clarification on the air.

After several surveys on the use of the telephone hours, it became clear that many of the questions asked were ones that the TV teacher could not answer as well as the section teacher. Some of these questions related to homework assignments, grades on examinations, the possibility of making up assignments or examinations, and the like. This discovery led to the arrangement of telephone conference hours for section teachers. Each section teacher within the first few weeks of a course mailed a printed postcard to each of his students. The card introduced the section teacher, listed the kinds of questions he could answer, and gave his telephone hours. TV teachers and section teachers reported that with few exceptions students directed questions to the appropriate member of the teaching team.

Conference and examination sessions represented another means of communication. In each subject, several face-to-face section conferences were scheduled during the semester. Television sections met at the branches of the City Junior College. The student met with his section teacher and, in some instances, his television teacher for discussion of questions, for drill in skills, and for other types of experience. The number of conferences varied from two to eight, depending on the nature of the course. For example, in Russian, the students met every other week, or eight out of the sixteen weeks, for discussion and oral practice. In addition to the conference meetings, two midsemester examinations and a final examination were held at the branches of the City College.[1] These conference and examination sessions gave students an opportunity to discuss the materials presented in the television course. They also gave section teachers an opportunity to learn of the problems that students had and to report these back to the television teacher who could then use telecast time to clarify some of the misunderstandings.

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[1] A sample mail-in worksheet can be seen in Appendix 4.

Television students in their telephone calls and letters testified that they had the feeling that the television teacher was talking directly to them. Teachers and students expressed little desire for a studio class. Consequently, the studio class idea was not used in the experiment. Television teachers stated that some television students seemed to know them more personally than many classroom students who had had face-to-face instruction. This personal rapport between the student and the teacher was achieved best by the teacher with a rich background of classroom teaching in the same course. The instructor was able to draw on this experience in building learning experiences with which the students interacted effectively, and he was able to predict the interaction and to pace his teaching to achieve it.

TV College students were adults with high motivation and maturity. These people have shown on questionnaires that they did not find the apparent one-way communication of the telecast a hindrance to learning. When asked if they wished an increase in the number of face-to-face conference sessions, they responded in the negative.

I. Promotion of TV College

Surveys of student opinion showed that the teleclass broadcasts themselves and other promotional activities on WTTW were effective means of increasing the student audience. Some students found TV College through channel switching, and others, through the TV program listings in newspapers and magazines--all TV College broadcasts were listed in the daily and weekly TV guides of the local newspapers and TV publications. WTTW included TV College in its regular program of "spot promotionals" and, before the beginning of each term, broadcast a series of as many as five half-hour "TV College Previews." These programs served to introduce viewers to teachers of the new series and to highlights of the courses. Brief interviews with currently enrolled students helped add interest to these programs and to the spot promotionals.

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[1] See Appendix 1 for Information Bulletin to Credit Students, which includes the conference and examination schedule.

In addition to the resources of WTTW itself, TV College used many other means of reaching potential students. Excellent support was given by the metropolitan and neighborhood newspapers in the Chicago area. News releases and suggestions of special interest stories which were sent out by the TV College office were accepted with regularity. In a few cases, full-page feature stories were carried by Chicago newspapers. Stories included a study of the typical work day for a television teacher, a survey of studio activity in TV College, a survey of student and teacher reaction in experimental and control situations, and human interest stories involving typical students.

Announcements of new courses and registration dates were sent out also to commercial radio and television outlets in the Chicago area. Announcements were carried in local news roundups. On a number of occasions, teachers or administrators were interviewed on local radio and television programs.

Another important promotional device was the mailing of a rather complete information folder to mailing lists which included recent graduates of Chicago high schools, credit and not-for-credit students of TV College, respondents to WTTW educational offerings, directors of college and counseling centers, librarians, PTA education chairmen, training directors, personnel directors, high school college counselors, service club chairmen, and a number of other categories of education-oriented persons in the Chicago community. The lists contained 90,000 addresses, and distribution totaled 120,000 information folders per term.

Distributors of books and materials specified for telecourses were encouraged to include announcements of the related TV courses in advertising and other promotional efforts. In some cases, this resulted in counter displays in bookstores and stationery shops promoting the TV College offering while promoting related merchandise. In some cases, book advertisements carried announcements of the related TV College courses and registration schedules.

On many occasions, TV College administrators and TV teachers served as speakers in response to requests from community social clubs and church and professional groups in the Chicagoland area. These speakers addressed themselves to a number of topics in the field of educational television and always described the unique educational opportunities offered by TV College. Businessmen's groups were given orientation in how TV College might fit into a company training program.

In addition to these general promotional activities, considerable effort was expended in trying to reach key persons in business and industry, particularly personnel managers, office managers, and training directors. In some cases, the entire program was brought to the attention of a business functionary in the hope that he would relate TV College to his own needs for upgrading personnel. In other cases, specific courses were promoted with particular groups, for example, typewriting and shorthand with an office manager's group.

These efforts developed much support for TV College in individual situations. Many business associations cooperated in the making of surveys and in the distribution of materials. Some business organizations or associations made an organized effort to involve workers directly in TV College. However, relatively few granted workers released time from work hours for this.

One attempt was made to schedule courses between 5:00 and 7:00 p.m. to suit the convenience of employed persons. It was thought that business firms could provide viewing rooms to enable TV College attendance at the close of the work day prior to evening appointments. These attempts to provide special schedules for employed persons were not successful, if measured by credit enrollments.

There were, however, many cases of enthusiastic support by the business community even though not expressed by direct involvement of company workers on an organized basis. One Chicago merchandiser expressed interest by paying for a full page advertisement of the TV College offering as a public service.

In addition to promotional efforts directed towards potential students, continuous efforts were made to interpret the TV College experiment to the larger professional community. Releases and announcements were sent to professional associations, to editors of professional magazines, and to key agencies in the educational television field. Reports were made to conferences of professional organizations. Experience and research results were recorded in three published reports--this one and two previous ones. These documents were mailed to interested teachers and educational agencies. An active correspondence was maintained with the people who represented all educational levels and all areas of the country and, indeed, of the world.

And, of course, face-to-face explanations were given to the steady stream of visitors who came to the Chicago City Junior College for first-hand observation of techniques and materials and for discussion of philosophy, procedures, and results. Liberal time was given to these individuals and groups because of a feeling of obligation to share findings with all interested in the use of television as a tool for improving the quality of education or for widening its service.

IV. ENROLLMENT AND RETENTION

A. Enrollments: Credit and Not-for-Credit

During the three years of the Chicago City Junior College television experiment, twenty-eight different courses for credit were offered. Some of the courses were repeated by kinescope in subsequent semesters to bring the total number of course offerings during the three years to forty-four courses for a total of 128 semester hours of credit. Three not-for-credit courses were offered in the third year.

Table 3 summarizes enrollments in TV College for the period 1956-59. Table 4 presents a summary of individual and course enrollments.

An analysis of the data presented in Table 3 shows the following:

1. The enrollment in a repeated course offered by kinescope varied with the time between initial and repeat semesters. If the repeat was offered in the first semester after the original offering, enrollment was about one half of the original semester enrollment. If the repeat was delayed for three semesters, the original enrollment could be equaled. Consequently, new courses had to be introduced each semester to maintain overall enrollments.
2. Enrollments varied widely by subject. Variation also appeared in the ratio of credit to not-for-credit enrollment. Some courses had relatively low credit enrollment and high not-for-credit enrollment--for example, Shorthand in fall 1957. Other courses had relatively high credit enrollments and low not-for-credit enrollments--for example, Physical Science 102 in spring 1958.
3. Enrollments dropped in the second term of two-semester sequences. The first course usually provided a screening of students and reduced the number who were qualified for or interested in the second course. As a consequence, a policy was established to offer via television only the first semester of one-year elective sequences. Television students were referred to classroom courses in the six branches for the second-semester courses in one-year elective sequences. In this manner, TV College served as a feeder for classroom courses.
4. The ratio of not-for-credit to credit enrollments in a course averaged three-to-one. As credit enrollments dropped in sequential courses, not-for-credit enrollments also dropped.
5. Enrollments dropped from fall to spring when the spring series included more second

TABLE 3
COURSE ENROLLMENTS IN TV COLLEGE, 1956-59, BY SEMESTER[1]

Registration By Courses	Credit	Non-Credit	Total		Credit	Non-Credit	Total
Fall 1956				Spring 1957			
English 101	801	1518	2319	English 101	186	593	779
Soc. Science 101	705	1335	2040	Fund. of Math. 101	233	1529	1762
Biology 101	628	1178	1806	English 102	389	774	1163
Pol. Science 223 National Gov't.	639	1203	1842	Soc. Science 102	424	339	763
				Biology 102	387	330	717
	2773	5234	8007		1619	3565	5184
Fall 1957				Spring 1958			
English 101 (Kine)	277	454	731	English 102 (Kine)	199	130	329
Biology 101 (K)	221	187	408	Soc. Science 101 (K)	250	140	390
Phys. Science 101	381	343	724	Biology 102 (K)	193	100	293
Fund. of Math. 101 (K)	149	389	538	Phys. Science 102	315	230	545
Math. 105 Slide Rule	234	1981	2215	Humanities 202	434	375	809
Accounting 101	315	1139	1454	Accounting 102	149	435	584
Shorthand 120 (Gregg)	238	2278	2516	Shorthand 121 (Gregg)	105	635	740
Humanities 201	583	844	1427	Math. 105-Slide Rule (K)	118	570	688
Gen. Psychology 201	504	789	1293	Pol. Science 221 - Municipal Gov't.	177	135	312
	2902	8404	11306		1940	2750	4690
Fall 1958				Spring 1959			
Humanities 201 (K)	396	321	717	Astronomy 201	282	522	804
Soc. Science 102 (K)	357	99	456	Business Law 211	210	307	517
Phys. Science 101 (K)	408	182	590	Eng. 105 Bus. Writ. (K)	84	156	240
Eng. 105 - Bus. Writing	194	440	634	Humanities 202 (K)	304	253	557
Amer. Literature 117	288	458	746	Math. 103 Col. Algebra	165	396	561
Fund. of Music 111	248	513	761	Phys. Science 102 (K)	275	209	484
Child Psychology 207	532	451	983	Child Psych. 207 (K)	287	214	501
Fund. of Speech 141	320	465	895	Elem. Russian 101	249	2620	2869
	2743	2929	5672	Fund. of Speech 141 (K)	94	174	268
				Speak Spanish (Not-for-credit)	---	4001	4001
				Pan Amer. Perspec. (Not-for-credit)	---	1375	1375
				Coll. & Your Career (Not-for-credit)	---	415	415
					1950	10642	12592

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[1] ENROLLMENTS IN FOURTH YEAR

Registration By Courses	Credit	Non-Credit	Total		Credit	Non-Credit	Total
Fall 1959				Spring 1960			
Biology 101 (Kine)	436	264	700	Biology 102 (K)	356	125	481
Business 117 - Typing	136	1514	1650	English 102 (K)	231	165	396
Business 255 - Sales'ship	111	289	400	Humanities 201 (K)	319	480	799
English 101 (K)	291	434	725	Amer. Lit. 117	172	280	452
Lit. 113 - Fiction	372	428	800	Math. 103 - Col. Alg. (K)	131	320	451
Fund. of Math. 101 (K)	186	364	550	Pol. Sc. 223 - Nat'l. Gov.	290	210	500
Math. 105 - Slide Rule (K)	121	679	800	Shorthand 120-121 (Pitman)	116	800	916
Prob. in Philosophy 215	372	578	950	Sociol. 145 Hum. Rel.	328	320	648
Develop. Reading 126	227	973	1200	Elem. Spanish 101	195	1300	1495
Elem. Russian 101 (K)	122	1103	1225				
	2374	6626	9000		2138	4000	6138

TABLE 4
SUMMARY OF ENROLLMENTS, 1956-1959, BY SEMESTER[1]

	CREDIT		NOT-FOR-CREDIT		TOTAL	
	Individuals	Course Reg.	Individuals	Course Reg.	Individuals	Course Reg.
Fall 1956	1364	2773	2761	5234	4125	8007
Spring 1957	938	1619	1564	3565	2502	5184
Fall 1957	1511	2902	6277	8404	7788	11306
Spring 1958	1065	1940	2117	2750	3182	4690
Fall 1958	1466	2743	1849	2929	3315	5672
Spring 1959	1228	1950	6734	10242	7962	12592
TOTAL	7572	13927	21302	33524	28874	47451

courses of one-year sequences. Fall and spring enrollments tended toward equalization when the spring series included as many introductory courses as the fall series.

6. Fall 1956 course enrollments were atypical of the enrollment picture in succeeding semesters. This may have been related to the initial promotional impact, a backlog of potential TV students, and to the smaller number of courses offered. It may also have reflected the fact that many adults regarded TV College as an easy road to college. This attitude was dispelled early as television students discovered standards equal to classroom standards. Assignments and examinations were equivalent to, or more rigorous than, those of classroom instruction.
7. Credit enrollments were high in the courses required for the Associate in Arts degree, including the following one-year general education sequences (two courses per sequence): English, Social Science, Biology, Physical Science, and Humanities. These ten courses, offered live and by kinescope, accounted for twenty-one course offerings, or 48% of the total, and had 1,813 credit students, or 58% of the total enrollment.
8. Elective courses which had over 500 credit enrollments included General Psychology 201, Child Psychology 207, and Political Science 223-National Government. Account-

[1] SUMMARY OF FOURTH YEAR

	CREDIT		NOT-FOR-CREDIT		TOTAL	
	Individuals	Course Reg.	Individuals	Course Reg.	Individuals	Course Reg.
Fall 1959	1357	2374	4748	6626	6105	9000
Spring 1960	1320	2138	2900	4000	4220	6138
TOTAL	2677	4512	7648	10626	10325	15138

ing 101, Fundamentals of Speech 141, American Literature 117, and Astronomy 201 enrolled 300 or more credit students.

9. Courses with large not-for-credit enrollments included Elementary Russian 101, Speak Spanish, Fundamentals of Mathematics 101, Mathematics 105-Slide Rule, Shorthand 120, and Accounting 101. These six were primarily skill courses in language, mathematics, and business fields and accounted for 50% of the not-for-credit enrollment. The ten required courses accounted for 30% of the total not-for-credit enrollment.

Table 5 shows the average credit enrollments by type of course and by broadcast schedule in a given semester.

TABLE 5
AVERAGE CREDIT ENROLLMENTS BY TYPE OF COURSE AND BY TYPE OF BROADCAST SCHEDULE

	Initial Semester Day and Eve. Live and Kine	Repeat Semester Day and Eve. Kine and Kine	Average Drop Initial to Repeat Semester
Required Courses	476	288	40%
Non-Skill Electives	484	287	44%
Skill Electives	233	111	52%

This table shows that skill electives drew fewer students than non-skill electives and required courses. When repeated the next semester, the average drop in enrollment was 40 to 52%. Apparently the educational needs of a major portion of the viewing audience were met by the initial presentation. Time was necessary to build up a new audience. To increase enrollments, a constant development and presentation of new courses was necessary.

B. Retention of Credit Students

Not only the enrollment but also the retention of students in TV courses is important in estimating the significance of TV College. The retention percentage was determined by dividing the number of course completions by the original enrollment and multiplying by 100. A student "completed" the course of study if he received a final grade of A, B, C, D, F or R. All the grades with the exception of the R grade were based on the results of the assignments and examinations completed during the semester and included the final examination. The R, or incomplete grade, was reserved for those students who completed all the required work with the exception of the final examination and who had made arrangements with the section teacher to make up this final examination.

Table 6 shows the retention of credit students by course for the three years of the TV experiment.

All of the retention percentages would have been higher, perhaps by 5 to 10%, if some valid means could have been devised to reduce the original enrollment by the number of students who withdrew officially and unofficially in the first few weeks of the semester. These withdrawals were not easily ascertained when students were not in the classroom under the attendance supervision of a classroom teacher. Hence, the retention figures should be regarded as minimum figures and not comparable with most retention figures for classroom enrollments, which are usually adjusted for these early withdrawals.

An analysis of Table 6 shows that there were differences in retention for different courses in a given semester and for the same course in different semesters. Retention in skill subjects like mathematics and shorthand was lower than in content subjects like social science and biology. In the first two years, the overall retention increased from fall to spring. This was related to the fact that the spring series included second courses of one-year sequences. The students who enrolled in the spring continuation courses were already partially selected by interest, ability, and success in the first course. The mid-year drop in enrollment was lessened in the third year after the conscious planning of course offerings to include beginning courses in both fall and spring and a balance of high-interest courses to attract new students in both semesters. In other words, enrollment and retention were related to the type of courses presented.

A study was made of the relationship of the time of enrollment to retention. It was found that the first fifty people to register for a course had a higher retention than the last

TABLE 6

RETENTION OF CREDIT TELEVISION STUDENTS BY COURSE, 1956-1959

E = Enrollment at Beginning of Semester
R = Number Receiving A, B, C, D, F, R Grade
$\% = \frac{R}{E} \times 100 = \%$ Retention

	E	R	%		E	R	%
FALL 1956				SPRING 1957			
English 101	801	503	63	English 101	186	122	66
Biology 101	628	401	64	English 102	389	290	75
Soc. Science 101	705	404	57	Biology 102	387	296	76
Pol. Science 223 - Nat'l. Gov't.	639	374	59	Soc. Science 102	424	333	78
				Fund. of Math. 101	233	107	46
FALL 1957				SPRING 1958			
Biology 101	221	145	66	Biology 102	196	156	80
Accounting 101	319	172	54	Accounting 102	150	94	63
Shorthand 120 (Gregg)	237	119	50	Shorthand 121 (Gregg)	107	93	87
English 101	252	144	57	English 102	206	133	65
Humanities 201	575	413	72	Humanities 202	426	351	82
Fund. of Math. 101	155	41	26	Math. 105-Slide Rule	123	66	54
Math. 105-Slide Rule	243	106	44	Phys. Science 102	317	253	80
Phys. Science 101	385	272	71	Pol. Science 221 - Mun. Gov't.	177	125	71
General Psychology 201	507	348	69	Soc. Science 101	255	189	74
FALL 1958				SPRING 1959			
Humanities 201	350	243	69	English 105-Bus. Writing	58	47	81
Soc. Science 102	307	224	73	Humanities 202	280	217	77
Phys. Science 101	322	229	71	Elem. Russian 101	248	143	58
Eng. 105-Bus. Writing	194	133	69	Math. 103-Col. Alg.	165	104	63
Amer. Literature 117	288	209	73	Descriptive Astron. 201	246	151	61
Fund. of Music 111	248	181	73	Phys. Science 102	251	182	72
Child Psychology 207	532	351	66	Child Psychology 207	274	183	67
Fund. of Speech 141	279	177	63	Speech 141	86	60	70
				Business Law 211	207	151	73

GRAND TOTALS:	FALL 1956	SPRING 1957	FALL 1957	SPRING 1958	FALL 1958	SPRING 1959
E	2773	1619	2894	1957	2520	1815
R	1682	1148	1760	1460	1747	1238
%	61	71	61	75	69	68

fifty people to register for a course. This suggested that more highly motivated and able people are first to register. As a consequence, late registration was limited to one session two to three weeks after the close of regular registration.

Retention was improved by increasing the opportunities for communication between the teacher and the student. For example, in Fundamentals of Mathematics 101, very little opportunity was provided for interaction between students and teachers, and the retention level was quite low--47% in spring 1957 and 26% in fall 1957. In Mathematics 103-College Algebra, in spring 1959, opportunities for mailing in, checking, and returning assignments were increased, and more face-to-face conferences and telephone conference hours were scheduled. The retention was 63%.[1] Another skill course, Fundamentals of Music 111, used lesson-by-lesson mailing and return of assignments. The TV teacher supervised the graders, sampling the papers to find out in which areas the students were having difficulty. He then clarified concepts or gave additional examples and explanations on subsequent broadcasts. The retention in Music 111 was 73%.

A number of other procedures were instituted to improve retention. Special counseling and admission procedures were instituted to insure that students did not enter courses for which they were not qualified and that they did not attempt heavier class loads than they could safely carry. Teaching was paced at the beginning of the telecourses to provide the student with some initial success to build interest and motivation. Conference sessions were coordinated with the TV lessons to ease students over difficult hurdles in the course. Assignments were carefully designed to provide students with satisfying evidence of their progress. Examinations were closely and clearly related to the course objectives and learning so that the students would feel that their grades were justly determined by their own efforts and abilities rather than by chance factors for which they could not be held responsible.

C. Total TV Audience

The following memorandum from Chalmers Marquis, Program Director of WTTW, to Clifford Erickson, Dean of Television Instruction, adequately describes TV College's total audience.

MEMORANDUM

TO: Clifford Erickson

FROM: Chalmers Marquis
DATE: April 8, 1960

SUBJECT: TV COLLEGE

WTTW has always attempted to measure the total numbers of persons in homes who view each of the various programs on WTTW, using data which has been regularly received over the years from both the American Research Bureau and the A. C. Nielsen television audience research organizations.

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[1] The value of increased communication can also be seen in Mathematics 101. In fall 1959, Mathematics 101 was repeated, utilizing these feedback arrangements. Retention rose to 59%.

According to these data, the number of persons estimated to be viewing TV College courses has averaged between 10,000 and 40,000 viewer-participants for each televised lesson. These figures would further indicate that upward of 25,000 persons are quite regular viewer-participants each semester for each television course offered, totaling perhaps 250,000 regular participants each semester, and probably 500,000 frequent but not daily viewer-participants in each semester's total course offerings. These numbers are steadily increasing, of course.

Although WTTW's broader-interest non-credit program offerings generally have much larger viewer groups, we consider the number of viewers for actual college curriculum presentations to be a striking example of the public's increasing search for education and a most exciting success story for the TV College project.

V. COST: TV vs. CONVENTIONAL INSTRUCTION

A. Comparison of Costs

In the three-year experiment, costs of television instruction were higher than those for classroom instruction if only credit students are considered. Of course, higher initial costs were to be expected during the progressive development of efficient modes of operation. Moreover, the pioneering aspect of this venture required extensive research in the quality of educational outcomes. Costs for this research are included in the totals.

The direct costs for television instruction for the first three years are shown in Table 7.

TABLE 7

DIRECT COSTS FOR TV INSTRUCTION, 1956-59

	July 1, '56 to June 30, '57	July 1, '57 to June 30, '58	July 1, '58 to June 30, '59	Total Three Years
Payroll	$171,666.71	$166,768.53	$144,307.06	$ 482,742.30
Station Costs WTTW	155,000.00	158,000.00	180,000.00	493,000.00
Other Costs[1]	46,770.69	45,632.12	27,431.00	119,833.81
Totals	$373,437.40	$370,400.65	$351,738.06	$1,095,576.11

The total costs of $1,095,576.11 for three years were paid in part by a generous grant of $475,000.00 from the Fund for the Advancement of Education. The Chicago Board of Education paid the remaining $620,576.11.

The only costs not included in Table 7 are those for certain services to TV students: library, counseling, registration, and heat and light for the occasional use of classrooms by TV sections. Even if it were possible to extract these costs from the budgets of the several branches, they would add a very small amount to the totals above. These latter costs may be partly or entirely offset by the modest income received from TV students in general service fees ($5.00 for a part-time program, $10.00 for a full-time program) and from not-for-credit enrollment fees ($1.00 per course).

Table 7 shows a reduction in payroll and "other costs" from 1956-57 to 1958-59 despite an increase in broadcasting from twenty-four to forty-eight half hours per week.

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[1] Other costs include reference and audio-visual materials, printing and mailing, and transportation.

The payroll was reduced by $27,350.65, or 16.0%, by reducing the number of teachers involved in the preparation and presentation of TV courses. "Other costs" were reduced by $19,337.69, or 41.4%. The number of broadcasts per week was increased from twenty-four to forty-eight per week, or 100%, with only a $25,000.00 per year, or 16.1%, increase in station costs. Some of these economies in station costs were effected by WTTW through reducing studio personnel--for example, in changing many telecasts from two-camera to one-camera operation. This change was made in those telecourses where no adverse effect on teaching and learning would be expected.

Table 8 shows the average cost per equivalent full-time credit student for both television and classroom instruction.

TABLE 8

AVERAGE NUMBER OF EQUIVALENT FULL-TIME STUDENTS SERVED AND COMPARISON OF COST PER STUDENT WITH CLASSROOM COST

1956-1959

	1956-7	1957-8	1958-9
Average Number of Equivalent Full-Time Students in TV Classes*	439	472	456
Direct Costs for TV Instruction	$373,437.40	$370,400.65	$351,758.06
Average Annual Cost for One Equivalent Full-Time Television Student*	$ 850.66	$ 784.75	$ 771.35
Approximate Average Annual Cost for One Equivalent Full-Time Classroom Student*	$ 421.80	$ 454.80	$ 498.00

* A full-time program is 15 semester hours -- 30 hours per year.

Table 8 shows that unit costs for television instruction declined each year but remained higher than those for classroom instruction. The ratio of television to classroom unit costs dropped from 2 to 1 to 1.5 to 1. Unit costs for television instruction declined $79.31 per equivalent full-time student, or 9.6%, while classroom unit costs increased $77.20, or 18.3%.

One cost variable related to course type was the cost of section instruction. Using data like that presented in Table 2, the cost of section instruction for skill subjects was found to average twice the cost of section instruction for content subjects.

Method of broadcast provided another cost variable. Calculations of live and kinescope broadcasting costs showed these to be related in the ratio of 6 to 1.

The variables of course type and method of broadcast can be combined to make a basis for an estimate of enrollments that would have been needed in 1958-9 to make unit costs of television instruction equal to those of classroom instruction in the same type of course. These estimated needed enrollments are shown in Table 9. Table 10 shows the actual enrollments.

TABLE 9

ESTIMATES OF ENROLLMENTS NEEDED IN 1956-59 TO MAKE UNIT COST OF TV INSTRUCTION EQUAL TO AVERAGE CLASSROOM COST BY TYPE OF SUBJECT AND BY MANNER OF PRESENTATION

Time Offered and Manner of Presentation	Courses with Primary Objectives of Skill Type*	Courses with Primary Objectives of Content Type*
First Time Offered Live Only (Eve)	524	339
First Time Offered Live (Day) with Kine Repeat (Eve)	682	441
Second Time Offered by Kine (Day) with Kine Repeat (Eve)	366	236

* See listings of courses in Table 3, page 36.

TABLE 10

ACTUAL AVERAGE TELEVISION COURSE ENROLLMENTS, 1956-1959, BY TYPE OF SUBJECT AND MANNER OF PRESENTATION

Time Offered and Manner of Presentation	Courses with Primary Objectives of Skill Type	Courses with Primary Objectives of Content Type
First Time Offered Live Only	211 students	323 students
First Time Offered Live (Day) with Kine Repeat (Eve)	370 students	461 students
Second Time Offered by Kine (Day) with Kine Repeat (Eve)	186 students	273 students

It is clear from Table 9 that skill subjects required larger enrollments than content courses to reach the cost level of classroom units. This was related to higher section teacher costs, since skill subjects needed more conferences with students and placed a larger paper grading burden on the section teacher. The cost of kinescope making required larger enrollments in the first term to offset this cost; but in a second semester of kinescope use, a lower enrollment would still have permitted television unit costs to equal classroom unit costs.

In two of the three categories of content courses in Tables 9 and 10, average enrollments actually exceeded the estimated enrollment needed to make the unit cost of TV instruction equal to average classroom costs. If the other estimated enrollments of Table 9 could have been surpassed, those students beyond the "break-even" points would have been served at very low unit costs. All broadcasting costs would have already been met, and the only additional costs would have been for section instruction, which for all TV courses was below classroom costs and for most courses was a small fraction of classroom costs.

Service to credit students was not the only service rendered by TV College. There was a larger service to not-for-credit students and to occasional viewers. Not-for-credit enrollments averaged over 5,500 course registrations and over 3,500 individual registrations each semester, or an equivalent of 1,100 full-time not-for-credit students. Surveys made by commercial agencies showed an average of from 10,000 to 40,000 viewers per TV College telecast. If collegiate level education has value beyond the recording of academic credits, then it is difficult to escape the conclusion that a tremendous educational service was being rendered beyond that measurable by the enrollments of credit students.

If appropriate means could be found for including the service to not-for-credit and occasional viewers in the cost calculations summarized above, the cost analysis would be much more favorable to television.

B. Reduction of Unit Costs

As outlined above, unit costs were derived by dividing total instructional costs by the number of equivalent full-time credit students served. Obviously unit costs could have been reduced by increasing the enrollments of credit students. They could also have been reduced by reducing the instructional costs.

When TV College was started in July 1956, there was no experience to draw upon to determine the number of instructors needed to prepare a TV course and the teaching time that should properly be allowed the TV teacher, the alternate, and the section teachers. It was decided to make allowances as liberal as possible in order to guarantee success.

During the course of the three year experiment, instructional costs were steadily reduced by adjusting teacher and producer loads in the light of experience, by adjusting loads for supporting section teachers, by reducing conference-examination centers from six branches to two branches, by increasing the broadcast schedule without comparable increases in costs, and by reducing administrative costs in production, research, and administration.

Enrollments were fostered by the large-scale promotion program already described. Other factors which might help to build credit enrollments are the following:

1. A decrease in tuition rates for out-of-Chicago residents. Students of TV College living within the boundaries of Chicago and who are legal residents of Chicago pay no tuition. Until fall 1959, students living outside Chicago paid a non-resident tuition equal to the unit cost of classroom instruction. This figure varied from $14.06 to $16.60 per credit hour per semester during the three-year experiment. By corrective legislation, endorsed by the Chicago Board of Education, state aid of $7.60 per credit hour was made to apply to out-of-district students who were residents of Illinois. This reduction of 40% in tuition rates for out-of-Chicago, Illinois residents may increase enrollments in TV College when the information is more widely disseminated and understood. In 1956-59, 3 to 7% of the TV College credit enrollments were out-of-Chicago residents.[1]
2. A new ruling secured from the Veterans' Administration in fall 1959 accepting television courses for veterans' benefits up to one-half of a veteran's course schedule. Up to fall 1959, veterans could not utilize television courses as part of a program of study for which G. I. Bill benefits were being received.
3. Cooperation with Chicago Teachers College in enrolling their upper division students. In the television course in astronomy, Teachers College students received instruction via TV College. They were required to complete readings and assignments and take examinations under the supervision of the Teachers College faculty. They were given grades and advanced credit by that faculty. It is possible that other courses may serve a dual purpose as did astronomy.
4. Formal plans of some business firms, in response to publicity given in commerce and industry under the caption TV College in Commerce and Industry, for enrollment of employees in TV College for upgrading of personal and vocational skills. As this idea is better understood and applied in industry, TV College enrollments may increase.

Several other means of increasing enrollments were explored, including the following:

1. The scheduling of telecast series in the same time-schedule patterns as classroom courses to increase the possibilities of combining classroom and television courses in a student program. This was undertaken in 1959-60, the first year that the six

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[1] In the spring of 1960, out-of-Chicago credit enrollments rose to 12% at the Wright branch.

branches used common class-scheduling patterns.[1] Adult students in the large branches who were denied admission to already-filled evening classes were able to elect television courses as part of an evening or late afternoon schedule. Day students of small branches had an increase in course offerings in afternoon hours by combining television and conventional instruction. In small branches, the demand for some electives was not great enough to warrant the formation of classroom sections. Students wanting these courses could take them via television.

2. Sharing limited staff skills among branches via television offerings. An example was the multiplication of a very small staff of Russian teachers to serve students in all branches, day and evening, well beyond the service this staff could have rendered as teachers of conventional classroom sections in the several branches.
3. Cooperation between the Chicago City Junior College and Chicago high schools in offering conventional college instruction to gifted high school seniors. Approximately fifty able high school seniors received instruction in college classrooms for college credit in fall 1959. Extension of this program of service using TV College courses could increase enrollments and provide a real service in accelerating the education of gifted high school students and encouraging many who might not otherwise do so to continue with college work.

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[1] The percentage of television students enrolled concurrently in television and classroom courses increased from 16% in spring 1959 to 32% in spring 1960.

VI. ACHIEVEMENT COMPARISONS IN CONTROLLED EXPERIMENTS

A. Summary of Achievement Comparisons in the First Two Years

In the first two years of the three-year experiment in open-circuit television instruction, the experimental design was focused primarily on comparing the achievement of TV-at-home students with that of conventionally taught classroom students. In the first year, most of the experimentation compared TV-at-home students with regular day classroom students. There was some attention to classroom students taught by TV with follow-up classroom instruction, and there was some use of conventionally taught evening students in a depth study in the general course in social science.

In the second year, experimentation concentrated on comparisons between TV-at-home students and conventionally taught evening students of age and motivation similar to the age and motivation of the TV-at-home students. Some experiments attempted to hold the teacher variable constant by comparing TV-at-home students taught by a kinescope-recorded course with regular evening students taught in the classroom by the teacher who had made the kinescopes. There was also a depth study in the general course in physical science.

The results of the first-year experimentation, reported in detail in the first report of the three-year study,[1] showed no significant differences in achievement between TV-at-home students and conventionally taught classroom students, except in the general course in biology (favoring TV). The results, by subject, are summarized here.

English 101. An analysis of covariance for 354 TV-at-home students, 32 TV-in-class students, and 101 conventionally taught control students resulted in final-examination adjusted means of 75.41, 72.08, and 71.13 respectively. The differences were not significant at the 5% level.

Social Science 101. A comparison of combined scores on two midterm examinations and a final examination for matched groups of 90 TV and conventional control students showed means of 157.45 and 153.33 respectively. The difference was not significant at the 5% level.

Biology 101. The adjusted final means for 259 TV-at-home, 54 TV-in-class, and 98 conventional control students were 110.31, 94.04, and 101.01 respectively. The differences favoring the TV-at-home group were significant at the 5% level.

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[1] The Chicago City Junior College Experiment in Offering College Courses for Credit via Open Circuit Television. A report of the first year of a three year project...Clifford G. Erickson and Hymen M. Chausow, March 1958.

Political Science 223-National Government. The adjusted final means for 244 TV-at-home, 51 TV-in-class, and 58 conventional control students were 108.69, 106.83, and 107.41 respectively. The differences were not significant.

English 101, second offering. A matched-groups comparison in the second semester using 33 TV-at-home students and 33 regular evening classroom students showed means of 23.85 and 23.79 respectively. The difference was not significant.

English 102. An analysis of covariance for 69 TV-at-home and 24 control students gave adjusted final means of 21.75 and 21.95 respectively. The difference was not significant.

Social Science 102. A comparison in which TV-at-home and evening control groups of 45 students each were equaled in terms of initial data showed final means of 74.64 and 73.89 respectively. The difference was not significant.

Biology 102. Matched-groups, method-by-levels, and analysis-of-variance techniques applied to initially equivalent TV-at-home and control groups each having 153 students gave final means of 110.16 and 106.30 respectively. The difference was significant at the 5% level and favored the TV group.

Fundamentals of Mathematics 101. An analysis of covariance for TV-at-home and control groups of 28 students each with final achievement measured in terms of letter marks given numerical values of A=4, B=3, etc., showed adjusted means of the marks of 2.97 and 3.17 respectively. The difference was not significant.

Social Science 101-102 depth study. A depth study during the first year involved Social Science 101 and 102. The final measures of achievement were cumulative scores based on four midterm and two final examinations and a fifty-item critical-thinking posttest, for a possible combined total of 455 raw-score units. The results of the year-long analysis are presented in Table 11.

To test the significance of the difference between the final totals, the t test was utilized. The difference was not statistically significant. These data warrant the conclusion that, as a group, the television students made progress in critical thinking neither significantly better nor worse than the conventionally taught evening students in Social Science 101 and 102.

In the second year, experimentation again revealed either no significant differences in achievement between TV-at-home students and those in conventional control classes or dif-

TABLE 11

ONE-YEAR COMPARISON OF THE MEANS OF CRITICAL-THINKING AND COMBINED EXAMINATION SCORES OF FORTY-FIVE MATCHED PAIRS OF STUDENTS IN SOCIAL SCIENCE IN TV AND EVENING CONTROL GROUPS, 1956-57

GROUP / RESULTS	TV Mean	EVE CONTROL Mean
Critical-Thinking Pretest (30 Items)	15.84	15.84
Critical-Thinking Posttest (50 Items)	31.31	31.34
Combined Examinations (4 Midterm - 2 Final Examinations)	294.27	284.42

ferences favoring TV-at-home (in the general courses in biology, physical science, and the humanities). The results of this experimentation, reported in detail in the second report of the three-year study,[1] are summarized here.

Accounting 101. A comparison between the TV and control classes was made on the basis of the total of the final jury-graded test score and the objective midterm examination score. Complete data were available for 53 TV students and 44 control students. The adjusted final means were 79.38 for the TV group and 76.05 for the on-campus control group. The analysis of covariance showed no significant difference of performance between the two groups.

English 101-102. TV and evening control students were taught by the same teacher. At the end of English 101, complete data were available for 31 TV and 24 control students. The overall average achievement difference between the TV students and non-TV students was not great enough to be regarded as significant. At the end of English 102, complete data were available for 16 control and 22 TV students. The analysis of covariance for these groups did not show any significant difference in growth of ability as measured.

Humanities 201-202. There were data pertaining to 69 TV and 73 control students available for comparisons covering a full year's work. The final total means based on four midterms and two finals were 379.16 and 345.73 respectively. Using both the Otis Mental Abilities Test and the subject pretest as the initial tests in the covariance analysis, the difference between the adjusted final means was significant beyond the 1% level in favor of the television group.

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[1] The Chicago City Junior College Experiment in Offering College Courses for Credit via Open Circuit Television. A report of the second year of a three-year project...Clifford G. Erickson and Hymen M. Chausow, April 1959.

Social Science 101. An analysis of covariance was made of the TV students and the TV instructor's conventionally taught control class. There were 56 TV and 23 control students. A comparison of the critical-thinking posttest data showed the TV mean to be 29.00 and the control class mean to be 26.47. The difference between the critical-thinking posttest means was not significant. The difference between the TV and control groups in the adjusted total achievement means was also not significant.

Biology 101-102. Matched-group, covariance, and methods-by-levels techniques were used for comparisons based on total combined scores on two midterm examinations and a final semester examination. The first semester total-combined-score means of the 26 students in each matched group were not significantly different. The difference favoring TV was within the 5 to 10% level of significance. In the second semester of the biology course, 153 students were matched on the basis of the first semester achievement data. The difference in the means favoring TV was significant at the 5% level. Methods-by-levels analysis of variance showed nonsignificant results with respect to the relationship between the method of instruction and the level of student ability.

Child Psychology 207. TV and regular student groups of 46 students each were matched on the basis of pretest scores. A comparison of final test scores showed means of 74.46 for the TV group and 69.89 for the control group scores. A *t* test showed that the difference, while favorable to TV, was not significant.

Shorthand 120. Complete data were available for 26 TV and 64 control students. The adjusted final total means for these groups were 109.22 and 104.64 respectively, favoring TV, though the difference was not significant. The median speed attained on the final transcription test was 50 words per minute for the TV group and 40 words per minute for the control group.

Physical Science 101-102 depth study. The comparisons of TV and control groups in the Physical Science 101-102 depth study are summarized in Table 12.

TABLE 12

COMPARISON OF TV AND CONTROL GROUPS IN PHYSICAL SCIENCE, 1957-1958

	OTIS BASE			PRETEST BASE		
	DAY	EVE	TV	DAY	EVE	TV
N	136	102	136	117	117	117
Final Means	205.78	217.54	215.62	205.11	218.18	215.38
F Test:	Significant at 5% level			Significant at 1% level		
t Tests:						
Day vs. Eve	Significant at 5% level favoring Eve			Significant at 1% level favoring Eve		
Day vs. TV	" " 5% level " TV			" " 1% level " TV		
Eve vs. TV	Nonsignificant			Nonsignificant		
F Test: Methods x Levels	Nonsignificant			Nonsignificant		

B. Achievement Comparisons in the Third Year

The first-year series of controlled experiments compared the achievement of TV home viewers with that of day students of normal college age receiving classroom instruction. Second year experiments compared the achievements of the adult TV students with those of evening classroom students, making age and maturity factors more nearly equivalent. In some cases, the achievement of the TV population was again compared with the achievement of the day classroom population.

In the third year, in addition to an extension of these comparisons to other subject areas, experimentation was undertaken in the use of the telecourse series for direct instruction of classroom groups of normal college-age full-time students.

The achievement of the classroom television students can be validly compared with that of conventionally taught students if other characteristics of the student population are essentially the same. The experimental and control classes were made as equivalent as possible by the use of a random selection. The students who registered to take a given course at a given hour were divided at random into TV and conventional sections.

The required general courses were used for this experimentation in classroom use of TV instruction for the following reasons:

1. These were established courses with outlines and materials agreed upon by a number of teachers.
2. They were offered in multiple sections at the same class hour, thereby permitting random selection of students from among those scheduled at the given hour.
3. They had already been presented on TV in earlier semesters. Previous experience in

comparing the achievement of TV and control classes afforded a broader base for achievement comparisons.

4. Since they were taught to a large number of sections, control classes could be selected from among many teachers without having such selection automatically identify teachers in later comparisons. This removed the fears of some teachers that such comparisons might reflect unfavorably on their abilities.
5. These courses had undergone a long development of evaluation materials with the help of the Division of Student Examinations.
6. The TV teacher could teach a control class (since his course was being shown on the air by kinescope) and thereby minimize the teacher variable.

Thus, Social Science 102, Physical Science 101, and Humanities 201-202 were selected for the comparisons of achievement of classroom TV students and conventionally taught students. Controlled experiments were also set up for Child Psychology 207 and Mathematics 103-College Algebra to compare the results of the home TV student with the evening conventionally taught adult student. In addition, the Speech Department at the Wright Branch agreed to participate in a depth study in Speech 141, comparing the achievement of TV home viewers, day classroom TV students, conventionally taught day students, and conventionally taught evening students.

Social Science 102. At the Wright Branch, one Social Science 102 section was permitted to double its normal enrollment. At the first meeting the students were given numbers as they entered the classroom, and by the use of random numbers, the class was divided into two sections. One section was taken to a classroom equipped with TV receivers to become a section taught by television. The other became a control class taught by the television teacher of the Social Science 101 course. Of the thirty-three students in the TV section, only one objected to his placement in this section.[1] Other instructors of the Social Science 102 course also volunteered to participate in the study and offered their day classes as control classes. They agreed to use the same outlines, have the same course objectives, and use the same evaluation instruments.

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[1] This student was invited to remain with the understanding that he could change to a conventional section after the first examination if he felt that he was suffering in this particular class. This student remained with the TV section and received a "B" grade in the course.

At the Amundsen Branch, a second class section was formed using a different manner of selecting students. The Amundsen Branch is a newer branch, with a smaller student body, offering principally afternoon and evening classes. All students registering for afternoon Social Science 102 classes found themselves in the classroom TV section. The students accepted this and none resigned or withdrew.

The TV students of the classroom sections were given the same instruction as the home viewers. The TV teacher had the primary responsibility for the presentation of course material. Each of the classroom groups had a section teacher who served the class just as he would a group of home viewers. The students met in the classroom for the half-hour TV lessons and adjourned as a class at the close of the telecast. No discussion or follow-up material was presented. Students were given an opportunity for conferences with the section teacher just as telephone conference hours were available to home viewers. The week preceding each examination was utilized for class discussion, the students remaining for the last twenty minutes of each of three periods. This equaled the one-hour conferences available to the home viewers.

TV-at-home students, students in TV-in-classroom groups at both Amundsen and Wright, and control groups at Wright were given the Otis Mental Abilities Test at the beginning of the semester. Two midterm examinations and one final examination were combined as a basis for comparing achievement. The total possible score for the combined examinations was 250 points.

The comparisons of achievement of students taught by the three methods are shown in Table 13.

TABLE 13

SOCIAL SCIENCE 102, FALL 1958
COMPARISON OF ACHIEVEMENT OF THREE GROUPS
OF SOCIAL SCIENCE STUDENTS

GROUP	N	OTIS MEAN	COMBINED EXAMINATIONS MEAN UNADJUSTED	COMBINED EXAMINATIONS MEAN ADJUSTED
TV-AT-HOME	29	54.45	132.52	129.13
TV-IN-CLASS	29	52.07	113.90	113.01
CONTROL	29	47.14	116.72	121.00

An F test and a covariance analysis showed the differences to be significant beyond the

1% level. Since F was significant, a t test was applied to the comparisons. A comparison between TV-at-home and TV-in-classroom gave a t of 3.62, which was significant at the 1% level, favoring the TV-at-home students. A comparison between the TV-at-home and the control classes had a t of 1.76. This was not significant, although it favored the TV-at-home group at about the 10% level. In a comparison of the TV-in-classroom and the control groups, the t was 1.77, which was also nonsignificant although favoring the control class at the 10% level.

The assumption of homogeneity of variance was well satisfied. The adjusted achievement mean of 121.0 for the control class approximated the actual achievement mean of 120.5 for 524 regular students in Social Science 102.

Physical Science 101. In Physical Science 101, controlled experiments were conducted at the Wright and Wilson Branches. At the Wright Branch, the achievements of three groups of students were compared: TV-at-home, TV-in-classroom, and conventional control. Students of the TV-in-classroom and control-class groups were selected in a random fashion. Enrollment for a given section was allowed to increase to twice the capacity of a conventional classroom. At the first meeting, students were given numbers and, through the use of a table of random numbers, were assigned to two groups. One group was moved to the TV viewing room; the other remained to receive conventional instruction as a control class.

A full-time instructor was assigned as section teacher for the TV-in-classroom group. This class received TV instruction and the same conference and paper-grading service as home viewers. At the end of the half-hour telecast, the class was dismissed; no follow-up instruction was provided during the class hour. Students could have private conferences with the section teacher just as the home viewers could have telephone conferences. Before each examination, the class remained for a twenty-minute conference on three days, equaling the one hour of conference given home viewers one week before the examination.

At the Wilson Branch, no attempt was made at special random selection of the groups. One Physical Science 101 class was permitted to fill to its normal size. At the first class meeting, the students were notified that their instruction would be via television and that an experienced instructor would serve as section teacher. The control class was simply another section taught in the conventional manner by an experienced teacher.

All students involved in the comparison were given the Otis Mental Abilities Test and a subject pretest. The course objectives were the same for all groups and the assignments and standards were kept equivalent. The final comparisons were based on the combined scores of two midterm examinations and a final examination. Only those students who completed the course were involved in the final comparison.

The data were tested for homogeneity of variance, and this assumption was satisfied. An analysis of covariance was utilized as the basic test to check the significance of the differences among the various groups. The F test showed a significant difference among the groups beyond the 1% level.

The comparisons are shown in Table 14.

TABLE 14

MEANS OF COMBINED EXAMINATION SCORES AND ADJUSTED MEANS BY METHOD OF INSTRUCTION PHYSICAL SCIENCE 101, FALL 1958

	Initial Otis Means	Subject Pretest Means	Combined Examinations Means	Combined Examinations Adjusted Means[1]	Combined Examinations Adjusted Means[2]
TV-at-home, Wright	56.78	22.44	225.42	212.41	220.24
TV-in-class (day), Wright	47.90	21.00	208.00	215.01	209.14
Control (day), Wright	55.00	21.10	237.20	230.85	237.90
TV-in-class (day), Wilson	48.00	19.88	177.55	188.47	183.61
Control (day), Wilson	50.73	21.61	184.16	185.29	182.62

[1] Using Otis and subject Pretest.
[2] Using Pretest only.

Since the F test was significant at the 1% level, it was considered justifiable to proceed with a *t* test of the adjusted final means to determine whether significant differences existed among the groups. At the Wright Branch, the difference between TV-at-home and TV-in-classroom groups was nonsignificant; the difference between TV-at-home and the control class was significant at the 5% level in favor of the control class when using both the Otis and subject pretest. At the Wilson Branch, the differences between the TV-in-class and the control class were not significant.

Utilizing the subject pretest as the base in the covariance analysis, the F test was still significant at the 1% level. The *t* tests showed that there was no change in the comparisons between TV-at-home and TV-in-class at Wright and TV-in-class and day control at Wilson. The results were still nonsignificant. However, the difference between TV-at-home and control at Wright no longer was significant, and the difference between TV-in-class and day control at Wright became significant at the 5% level favoring the control group.

The differences between the control classes at Wright and Wilson were significant at the 1% level in favor of the Wright control class.

Humanities 201-202. Achievement comparisons in Humanities 201 were made at the Wilson Branch, where the TV teacher was regularly assigned. The basic comparison was between TV-in-classroom and conventional control classes. All students involved were given the Otis Mental Abilities Test and a subject pretest. The results in Humanities 201 are shown in Table 15.

TABLE 15

COMPARISON OF RESULTS IN HUMANITIES 201
FALL 1958

	N	OTIS MEAN	PRETEST MEAN	COMBINED EXAMINATIONS MEAN
TV-in-class (Day)	31	49.3	28.3	176.16
Control (Day)	44	51.2	27.6	181.11

Since the group pretest means were essentially equivalent, the matched-groups formula was applied, and the t test showed that the results were nonsignificant. An analysis of covariance was also made comparing the TV-in-classroom with the control class, using the Otis test as a base and the combined examination scores (two midterms and a final examination) as measures of achievement. The F test showed that the difference between the two groups was not significant.

The TV-in-classroom students were "involuntary" students, i.e., they did not know that they were going to receive their instruction via television. They were handled as a television section in the same way that the home viewers were handled.

In Humanities 202, the experiment took place at the Wright Branch, where the TV teacher was regularly assigned. A comparison was made of the results of a "voluntary" TV-in-classroom student body with control-class students taught by the same teacher. The voluntary TV class was obtained by including a notation on the master program that this particular class would be offered via television. The students in both classroom situations were regular day students. An analysis of covariance was made and the results, based on those students who completed two midterms and a final examination, showed an F significant beyond the 1% level favoring the control class. The data are reported in Table 16.

TABLE 16

COMPARISON OF RESULTS IN HUMANITIES 202
SPRING 1959
COVARIANCE ANALYSIS

	N	OTIS MEAN	COMBINED EXAMINATIONS MEAN	COMBINED EXAMINATIONS ADJUSTED MEAN
TV-in-class (Day)	20	60.35	152.85	152.01
Control (Day)	31	58.52	175.68	176.10

Thus, with the same instructor in both classroom situations, there was a significance at the 1% level favoring the conventional method of instruction.

Psychology 207. The experiment in Child Psychology 207 was made at the Wright Branch and involved a comparison between TV-at-home students and on-campus students. Two control classes were involved--a late afternoon class handled by the alternate teacher, and an evening control class handled by a full-time psychology teacher. All the students involved in the experiment took the Otis Mental Abilities Test and a subject pretest and were compared as to achievement based on two midterm tests and a final examination. Table 17 includes the basic data necessary for the analysis of covariance.

TABLE 17

COMPARISON OF TV & CONTROL CLASSES, PSYCHOLOGY 207
FALL 1958

	N	OTIS MEAN	SUBJECT PRETEST MEAN	COMBINED EXAMINATIONS MEAN
TV-at-home	60	56.32	30.27	187.27
Afternoon control	30	54.30	30.23	178.83
Evening control	21	52.76	28.43	164.48
Combined control	51	53.66	29.49	172.92

An analysis of covariance of results of the TV-at-home and the two control groups revealed an F significant at the 5% level.

A t test showed a difference between TV class and evening control class final means favoring the TV class significant beyond the 1% level. No significant difference between the TV and the afternoon control class handled by the alternate teacher was found, but a difference significant at the 5% level favored the alternate teacher with the afternoon control class compared with the evening control class.

When the two control classes were combined, a t test showed a difference significant beyond the 1% level and favoring the TV-at-home group.

Mathematics 103. In the spring of 1959, an experiment compared TV students at home with a conventional evening control class both taught by the same instructor. The results of the comparison of the TV and the control class are shown in Table 18.

TABLE 18

COMPARISON OF RESULTS OF TV-AT-HOME AND EVENING CONTROL GROUPS
MATHEMATICS 103, SPRING 1959

	N	OTIS MEAN	FINAL ACHIEVEMENT MEAN
TV-at-Home	35	55.20	140.23
Evening Control	30	57.97	122.67

A t test was made to check the significance of the difference between the two groups, and the result was significant at the 1% level favoring the TV-at-home group.

A follow-up study was made of the retention of students in the two groups. This showed that the TV-at-home had a retention of 63% and the control class of 74%.

C. The Third-Year Depth Study: Fundamentals of Speech 141

The first two reports included results of depth studies relating to television instruction in Social Science 101-102 (1956-7) and Physical Science 101-102 (1957-8), both required general courses. In the third year, an elective course was selected for depth analysis--Fundamentals of Speech 141. The TV teacher was the chairman of the Speech Department at the Wright Branch. All nine members of the Wright Speech Department agreed to cooperate in the evaluation of the speech course.

A major purpose in the third-year depth study was to acquire more data on the effectiveness of television instruction for normal college-age day students. At the same time opportunity was given to secure more data on the comparison of achievements of the TV-at-home students with conventionally taught evening students.

In the experimental design for this depth study, four groups were involved: TV-at-home students, TV-in-classroom randomly selected day students, randomly selected conventional day control students, and conventional evening control students. The evening control classes were taught by the TV teacher and his alternate teacher. The TV-in-classroom group and the conventional day group were selected from a pool of all afternoon speech students and assigned to their respective groups by random numbers.

A ten-item speech evaluation form was developed as a direct outgrowth of the statement of objectives of the course. This form was used by students for evaluating speeches made by others. It was also used by section teachers and in jury-grading of initial (pretest) and final (posttest) speeches made by students in the various groups.

The initial and final student speeches were tape recorded for jury grading on a random basis at the close of the term. This served to compensate for any biases in the rating of initial and final speeches. The data analyzed were scores or ratings on the Otis Mental Abilities Test, the subject pretest, the initial pretest speech, which was tape recorded and jury graded. The final written achievement scores were of two types, one based on the written posttest only, the other on the total instructional score, which included two written midterm examinations and the final examination.

Only those students for whom complete data were available were included in the final analysis. Table 19 gives a summary of the data pertaining to the four groups of students.

TABLE 19
SUMMARY OF MEAN EXAMINATION AND INSTRUCTIONAL SCORES AND ADJUSTED MEANS BY METHOD OF INSTRUCTION
SPEECH 141, FALL 1958

	N	OTIS MEAN	WRITTEN PRETEST MEAN	WRITTEN POSTTEST MEAN	WRITTEN POSTTEST ADJ. MEAN	TOTAL INSTR. SCORE MEAN	TOTAL INSTR. SCORE ADJ. MEAN	FINAL ORAL MEAN	FINAL ORAL ADJUST.[1] MEAN
TV-at-home	17	53.41	20.88	31.29	29.88	70.35	67.01	52.00	51.24
TV-in-class (Random day)	15	42.93	16.27	24.73	26.53	57.87	62.58	46.53	47.58
Conventional Control (Random day)	48	50.65	18.50	25.85	25.91	60.08	60.10	46.10	46.10
Conventional Control (Evening)	37	50.72	18.89	25.22	25.06	57.86	57.45	48.32	48.33

	TOTAL INSTR. & ORAL COMBINED MEAN	ADJ. TOTAL INSTR. & ORAL COMBINED MEAN
TV-at-home	122.35	118.34
TV-in-class (Random day)	104.40	109.65
Conventional Control (Random day)	106.15	106.19
Conventional Control (Evening)	106.19	105.68

[1] The Otis and subject pretest were utilized as a base.

An analysis of covariance was made for the posttest, the total instructional score, and the final oral examination. In each case, the F test showed a significance beyond the 1% level. Thus it was possible to continue the analysis among the various groups by comparing pairs of them on the basis of the t test, as is reported in Table 20.

TABLE 20
RESULTS OF t TESTS OF SIGNIFICANCE
IN ACHIEVEMENT COMPARISONS, SPEECH 141, FALL 1958

Comparison Groups	Written Posttest	Total Instructional Score	Jury Graded Taped Oral Speech	Combined Oral and Written Total
TV-at-home vs. TV-in-classroom	Not significant	Not significant	Not significant	Not significant
TV-at-home vs. Day control	Significant @ 1% level favoring TV-at-home	Significant @ 1% level favoring TV-at-home	Significant @ 1% level favoring TV-at-home	Significant @ 1% level favoring TV-at-home
TV-at-home vs. Eve control	Significant @ 1% level favoring TV-at-home	Significant @ 1% level favoring TV-at-home	Significant @ 5% level favoring TV-at-home	Significant @ 1% level favoring TV-at-home
TV-in-classroom vs. Day control	Not significant	Not significant	Not significant	Not significant
TV-in-classroom vs. Evening control	Not significant	Not significant	Not significant	Not significant
Day control vs. Evening control	Not significant	Not significant	Significant @ 5% level favoring Evening control	Not significant

On the written material, differences significant beyond the 1% level favoring the TV-at-home group were found between TV-at-home and either day or evening conventional controls. No other significant differences were obtained on the written materials among any of the other groups. On the basis of the final oral speech, differences significant at the 5% level were found between TV-at home and evening controls. A significant difference at the 5% level favored evening control over day control. Also, the difference in the final oral speech between TV-at-home and day controls was significant at the 1% level favoring TV-at-home. A further analysis was made of the oral results in a comparison between TV-at-home and evening controls, both groups taught by the same instructor. Jury-graded taped pre- and posttest orals were available for analysis. The results are presented in Table 21.

TABLE 21
COMPARISON OF TV-AT-HOME AND
EVENING CONTROL GROUPS, SPEECH 141

	N	ORAL PRE	ORAL POST	ADJ. ORAL POST
TV-at-home	17	31.53	52.00	51.77
Eve control	37	30.30	48.32	48.55

The F test showed a significance at the 1% level favoring TV-at-home.

In none of the comparisons were there any significant differences between the random groups of day students, i.e., the TV-in-classroom group and the conventional day control group.

When the total instructional score was combined with the final oral results, the only significant differences occurred between the TV-at-home group and either the day or evening control groups, favoring TV-at-home at the 1% level.

In this experiment, the TV-in-classroom group was handled differently from the TV-in-classroom groups in other subjects. In the other subjects, the students receiving their instruction via television were handled in the same manner as the home viewers, i.e., they received half-hour TV instruction three times per week and were then dismissed. They had the equivalent of a one-hour conference before each examination, and the section instructor was available throughout the semester to answer any questions. In Speech 141, however, the section instructor met with the class during and after the telecast for the full 50-minute period. This was necessary in order for the students to be able to participate in the same number of speeches and critiques as the conventionally taught students. Thus, there was greater interaction between the instructor and students in Speech 141 than in any other TV-in-classroom situation.

An interesting sidelight was the discovery that, on the average, speeches received higher grades from juries which heard speeches live than from juries which listened to tape recordings of the same speeches. When 156 speeches were evaluated live, the average score was 47.17. When the same speeches were evaluated from tape recordings several weeks later, the average on the same criteria was 41.94, a difference of over five points on a possible seventy point maximum scale. Since this was true in all groups regardless of method of instruction, it did not bias the experimental comparisons.

D. Summary of Third-Year Comparisons

In the first two years, experimentation showed that TV-at-home groups achieved at least as well as and sometimes significantly better than conventionally taught classroom groups. This was true even when the groups were equated as much as possible in age and initial ability and when adjustments were made for inequalities in initial ability. In the third year, experimentation again showed TV-at-home groups achieving as well as or better than conventional classroom groups. (In Psychology 207, Speech 141, and Mathematics 103, TV-at-home groups were favored over control groups at the 5%, 1%, and 1% levels respectively.) However, other experimentation showed that TV-in-class groups sometimes achieved as well as conventional groups but not always. In Social Science 102, Humanities 201, and Speech 141, TV-in-class and conventional day groups did not differ significantly in achievement, but in Physical Science 101 and Humanities 202, conventional classes were favored over TV-in-class at the 5% and 1% levels respectively.

TABLE 22
SUMMARY OF ACHIEVEMENT COMPARISONS BY SUBJECT FOR THE THIRD YEAR, 1958-59

DATA GROUP	N	OTIS	SUBJECT PRETEST	FINAL MEANS	ADJUSTED FINAL MEANS	SIGNIFICANCE
Social Science 102:						
TV-at-home	29	54.45	--	132.52	129.13	F: Significant @ 1% level TV-at-home vs. TV-in-class-significant @ 1% level, favoring TV-at-home No other significant differences
TV-in-class (Random day)	29	52.07	--	113.90	113.01	
Control (Random day)	29	47.14	--	116.72	121.00	
Physical Science 101:						
(TV-at-home	36	56.78	22.44	225.42	212.41	F: Significant @ 1% level Wright control vs. TV-significant @ 5% level, favoring control No other significant differences
Wright (TV-in-class (Random day)	29	47.90	21.00	208.00	215.01	
(Control (Random day)	30	55.00	21.10	237.20	230.85	
(TV-in-class (day)	33	48.00	19.88	177.55	188.47	
Wilson (Control (day)	44	50.73	21.61	184.16	185.29	
Humanities 201:					Matched Group Analysis	
TV-in-class (day)	31	51.2	27.6	176.16		No significant differences
Control (day)	44	49.3	28.8	181.11		
Humanities 202:						
TV-in-class (day)	20	60.35	--	152.85	152.01	Significant @ 1% level, favoring control
Control (day)	31	58.52	--	175.68	176.21	
Psychology 207:						
TV-at-home	60	56.32	30.27	187.27	185.53	F: Significant @ 5% level TV vs. Eve control & Combined controls-significant @ 1% level, favoring TV Day controls vs. Evening controls-significant @ 5% level, favoring day controls
(day	30	54.30	30.23	178.83	178.80	
Controls (eve	21	52.76	28.43	164.48	169.33	
(combined	51	53.66	29.49	172.92	175.00	
Mathematics 103:						
TV-at-home	35	55.20	--	140.23	--	Significant @ 1% level, favoring TV
Control (eve)	30	57.97	--	122.67	--	
Speech 141:						
TV-at-home	17	53.41	20.88	122.35	118.34	F: Significant @ 1% level TV-at-home vs. both controls-significant @ 1% level, favoring TV-at-home No other significant differences
TV-in-class (Random day)	15	42.93	16.27	104.40	109.65	
Controls (Random day)	48	50.65	18.50	106.19	106.19	
(Eve)	37	50.73	18.89	106.19	105.68	

When one attempts to evaluate through these findings the single variable of television vs. conventional instruction, one discovers that apparently television is sometimes superior to, sometimes equal to, and sometimes inferior to conventional instruction (sometimes superior for the at-home group and sometimes inferior for the in-class group). How can these apparent variations in the results be explained?

One of the problems involved in comparing different methods of instruction lies in isolating the method variable in a complete definition of a teaching-learning situation. Very often the situation is labeled by a general method term, such as lecture or discussion. But such a term refers very loosely to only one variable in a very complex teaching-learning situation having many interacting variables, some of them more important than the method variable. The differences between the variables within a single teaching-learning situation labeled as representing a given method may be greater than the differences between variables from two situations representing different methods. Therefore, if the method of instruction is to be evaluated, the definition of the teaching-learning situation must identify each variable and indicate precisely the similarities and the differences between the situations being compared.

Criteria such as the following can serve as a frame of reference for a more accurate definition of a teaching-learning situation: the degree and type of student motivation, the number of opportunities for problem solving, the amount of practice in use of the new learning, the amount of participation in group discussion, the amount of private or semi-private consultation with the teacher, the variety of learning experiences, the organization of learning experiences, the training and previous experience of the instructor, and the age, ability, interests, etc., of the student population.

This kind of analysis was used by the Social Science faculty of the Wright Branch when it participated in the Cooperative Study of Evaluation in General Education sponsored by the American Council on Education. This faculty made a comparison of student growth in critical thinking in Social Science 101-102 for lecture and discussion methods of instruction. During the first year of the project, nonsignificant gains between the pre- and posttest of critical thinking were found in both the lecture and discussion methods. In the following years, a set of criteria for defining learning situations was developed, and it was possible to identify several types of teaching-learning situations. The final comparisons showed differences with a significance beyond the 1% level among these classroom situations. The differences were found within each "method" of instruction and between lecture and discussion methods and were shown to be related to the degree of application of the above criteria to the classroom learning situation. In effect, there were more differences within a method than between methods of instruction.

If this method of analysis could be used in comparisons of television and conventional instruction, it might be possible to discover a hypothesis which would explain the apparent variations in the results of the comparisons in the three-year experiment.

In spite of these apparent variations, a basic conclusion seems fully warranted by the results of the three-year experiment:

> When evaluated by the techniques of measurement and analysis used in the experiment, television instruction is a thoroughly effective means of extending college opportunities to at-home students in all the subject areas explored in the experiment.

VII. SPECIAL STUDIES

A. Graduates of TV College

A primary goal of the TV College experiment was the presentation of a comprehensive series of telecourses to enable students to complete the first two years of college via TV and receive an Associate in Arts degree.

In the three years 1956-59, 110 students received an Associate in Arts degree earned at least in part via television. Fourteen of these completed all of their degree requirements via television. The 110 graduates on the average took 30 of the required 60 hours of work via television. Many took courses concurrently on-campus. In spring 1959, concurrent registrations amounted to 15% of all TV students. Among the graduates, nearly 50% were concurrently enrolled in TV and classroom courses. This greater percentage of concurrent enrollments by the graduates was due in part to the fact that only 10 of the 600 courses of the Chicago City Junior College were offered via television in any given semester. There is evidence of an increasing trend toward concurrent enrollment.[1]

The average age of the TV graduates varied by semester between 32 and 35 years. The range of age extended from under 17 to over 70. Many from this mature, highly motivated group planned to go on for higher degrees. Thirty-five to forty per cent of these graduates planned to go into teaching. Almost one-third showed interest in the field of business. Other preferences included journalism, liberal arts, police administration, mechanical engineering, and nuclear physics. Some stated they were interested in self-improvement.

An analysis of the grades earned in spring 1959 by the June 1959 TV graduates enrolled only in TV courses that semester shows an average of 2.57 (A=4, B=3, C=2, D=1, F=0). The grade averages of these graduates for their entire two year program including campus and TV instruction was 2.48. Thus, TV students did as well in TV courses as they did in classroom courses.

Another comparison was made of grades earned by graduates in the spring 1959 semester who were enrolled in both TV and campus courses. Their grade point average for on-campus classes was 2.68 and for TV 2.52, showing essentially the same levels of achievement by the two modes of instruction.

TV graduates have earned their share of honors, some having graduated with high honors. Several handicapped students have received the Associate in Arts degree entirely by TV.

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[1] In spring 1960, 32% of the TV students were concurrently enrolled in classroom courses.

A husband and wife have earned the Associate in Arts degree entirely by television. Many other interesting cases could be cited.

Two-thirds of currently enrolled television students indicate that they plan to graduate from the Junior College. TV College has served to sensitize these people to the value of higher education. Many begin college work via television and then combine television with classroom work to complete requirements for graduation

B. Student Opinionnaire, Fall 1958

In the fall of 1958, four courses--Humanities 201, Physical Science 101, Social Science 102, and Speech 141--were involved in a student opinionnaire concerning study habits, attitudes toward television instruction, etc. These courses had the following groupings: TV students at home, TV students in the classroom, and conventional control classes. Physical Science, Social Science, and Speech had additional random control groups. These random groups were established by allowing a particular class to increase in size and by dividing the class by random numbers, one group to watch the program on TV in the classroom and the other to be taught in the conventional manner. The students in the TV-in-class situation did not know in advance that the course would be presented in that manner.

Each item in the opinionnaire utilized either a three or four point scale. A weighted average was used for comparative purposes. The results for some of the items can be seen in Table 23. An Analysis of this table shows the following:

Course Rating. The TV-at-home group rated Speech the highest--between excellent and superior. Humanities and Social Science were rated above excellent, and Physical Science was rated between average and excellent. For the TV-in-classroom group, all courses were rated approximately the same--average. For the control classes, Speech was rated as excellent, and the others were rated between average and excellent. In the two random control classes, the results were approximately the same as in the other control classes.

Amount of Supplementary Reading Done. The group that reported the largest amount of supplementary reading was the TV-in-classroom group in Humanities 201, although not significantly greater. Most of the students read one-tenth or less of the supplementary reading.

Note Taking. In this item, there were differences depending on the subject matter involved. In Humanities, there were only slight differences between TV-at-home, TV-in-the-classroom, and control classes. Most of the students took notes. In Physical Science, there were no differences between TV-at-home and the various control classes; most of the students took notes. However, in the TV-in-classroom group for Physical Science, fewer

TABLE 23
COMPARISONS OF STUDENT OPINION BY COURSE AND TYPE OF INSTRUCTION, FALL 1958

COURSE		HUMANITIES 201			PHYSICAL SCIENCE 101				SOCIAL SCIENCE 102				SPEECH 141		
ITEM	GROUP / RATING	TV-At-Home N-59	TV-Class-Room N-21	Con-trols N-100	TV-At-Home N-143	TV-Class-Room N-58	Ran-dom Cont. N-35	Reg. Con-trols N-208	TV-At-Home N-77	TV-Class-Room N-41	Ran-dom Cont. N-24	Reg. Con-trols N-138	TV-At-Home N-62	TV-Class-Room N-30	Ran-dom Cont. N-124
Course Rating	4-Superior; 3-Excellent 2-Average; 1-Poor	3.14	2.00	2.65	2.88	1.89	2.69	2.60	3.04	1.94	2.83	2.55	3.55	1.77	2.98
Amount of Supplementary Reading	3-Over 1/2 2-1/10 to 1/2 1-Less than 1/10	1.53	1.90	1.84	1.43	1.45	1.54	1.44	1.32	1.27	1.39	1.31	1.37	1.50	1.58
Note Taking	3-Almost always 2-Sometimes 1-Seldom	2.78	2.62	2.74	2.69	2.30	2.63	2.55	2.65	2.54	1.67	1.86	2.82	2.00	1.71
Recommend Course to Others	3-Yes 2-Undecided 1-No	2.92	1.71	2.73	2.75	1.81	2.54	2.57	2.89	1.86	2.63	2.47	2.94	1.60	2.78
Take Course if TV only	3-Yes 2-Undecided 1-No	2.90	1.81	1.94	2.91	1.98	1.66	1.80	2.89	1.95	1.79	1.69	2.94	1.87	2.20
Choice between TV & Regular Classes	3-TV 2-Either 1-Regular	2.29	1.10	1.10	2.15	1.34	1.11	1.11	2.07	1.22	1.17	1.08	2.61	1.23	1.39
Interest in Course at Beginning Mid-term End	4-Very High; 3-High 2-Average; 1-Low	3.21 3.12 3.00	2.90 2.38 1.81	2.52 2.71 2.68	3.29 2.95 2.79	2.62 2.06 1.86	2.71 2.89 2.77	2.79 2.61 2.40	3.21 3.09 3.15	2.85 2.10 2.10	2.78 2.70 2.46	2.58 2.45 2.49	3.28 3.40 3.72	2.62 1.90 1.46	2.70 2.98 3.13

students took notes. The TV-at-home and the TV-in-classroom students in Social Science took notes more regularly than the various control classes. In Speech, practically all the people at home took notes all the time. The TV-in-classroom group in Speech more often checked "sometimes" for note-taking, and the random controls averaged between "seldom" and "sometimes."

Would You Recommend This Course to Others? Practically all of the people at home answered yes. In the control classes the average was close to yes, although there were many undecided. However, in the TV-in-classroom group, the weighted average was between undecided and no in all courses.

Would You Take This Course If It Were Offered Only Via TV? In practically all cases, the TV-at-home students answered yes. In all four courses, the TV-in-classroom groups and a variety of control groups showed no differences in willingness to take more TV-in-class instruction. The averages were between undecided and no.

Would You Favor Television or Conventional Instruction? In Speech, most of the TV-at-home students favored television. In the other courses, the TV-at-home students favored it or were undecided. However, the TV-in-classroom students and students in the control classes would have preferred conventional classroom instruction.

What Is Your Interest in the Courses--At Beginning, Middle, and End of Term? There was little change in interest ratings during the term in all courses and for all groups, with the exception of TV-in-classroom, where the interest level decreased as the semester progressed. Specifically, in Humanities, the TV-at-home group had high interest at the beginning, at the middle, and at the end. The control groups had between average and high interest at the beginning, the middle, and the end, but the TV-in-classroom group had a high interest at the beginning, an average to above average interest at midterm, and below average to low interest at the end. This pattern was repeated in Physical Science and in Social Science. In Speech, interest on the part of the TV-at-home students and in the random control groups increased as the semester progressed, while interest decreased among students taught by TV-in-classroom. The decrease of interest in the TV-in-classroom situation is supported by the other classes. However, the increased interest from high to very high on the part of the other students at the end of the semester was quite interesting.

The opinionnaire data support the conclusion that the experiment dealt with different populations rather than different methods of instruction. Where the populations are constant, the results are fairly constant. Where the populations are different--for example, in comparing mature adults at home with teen-agers in school--the results are different. Some of the preliminary results in terms of achievement also seem to support this observation. There are greater differences between TV-at-home and TV-in-classroom than between TV-at-home and control classes. If TV is to be used in the classroom, new means must be developed to enhance its position in the eyes of the students.

In spring 1959, an additional opinionnaire was given to students in Humanities 202 and Physical Science 102, second semester courses. The object was to check the results of the first semester. The students in the TV-in-classroom situation were volunteers rather than randomly selected. In fall 1958, students were arbitrarily assigned to a classroom to view the television course; they had no choice. The results of the spring volunteer group in relation to the TV-at-home and control class are shown in Table 24.

TABLE 24
COMPARISONS OF STUDENT OPINION BY COURSE AND TYPE OF INSTRUCTION
SPRING 1959

COURSE		HUMANITIES 202			PHYSICAL SCIENCE 102		
ITEM	GROUP / RATING	TV-At-Home N-91	TV-Class-Room N-24	Con-trols N-31	TV-At-Home N-67	TV-Class-Room N-20	Con-trols N-100
Course Rating	4-Superior; 3-Excellent 2-Average; 1-Poor	2.58	2.04	2.29	2.79	2.20	2.49
Amount of Supplementary Reading	3-Over 1/2 2-1/10 to 1/2 1-Less than 1/10	1.57	1.29	1.35	1.36	1.70	1.50
Note Taking	3-Almost always 2-Sometimes 1-Seldom	2.75	2.62	2.77	2.70	2.55	2.75
Recommend Course to Others	3-Yes 2-Undecided 1-No	2.63	2.17	2.06	2.72	2.40	2.39
Take Course if TV Only	3-Yes 2-Undecided 1-No	2.92	2.17	1.74	2.82	2.30	1.75
Choice between TV & Regular Classes	3-TV 2-Either 1-Regular	2.04	1.46	1.19	2.01	1.40	1.15
Interest in Course at Beginning Mid-term End	4-Very High; 3-High 2-Average; 1-Low	3.41 2.86 2.91	3.08 2.38 2.00	2.74 2.55 2.00	3.10 2.78 2.64	2.55 2.50 2.30	2.83 2.48 2.18

An analysis of Table 24 and a comparison of these data with data for Humanities 201 and Physical Science 101 reported in Table 23 show that the voluntary students in the TV-in-classroom situation rated the courses higher, would more readily recommend the courses, and would be more willing to take TV-in-classroom instruction in the future. The volunteers had about the same interest in a course in the beginning of the term as did the randomly selected students of the previous semester, but their interest declined less. The interest of control class students also declined. There was very little change in the other items in this comparison in the two situations. It should be pointed out that the offering of TV-in-classroom was not originally on the master schedule of classes and was introduced after registration began. Therefore, it is possible that students registered for TV-in-classroom without "desiring" it because other courses were either closed or withdrawn at the time they registered. In the future, it is planned to integrate the TV schedule with the regular on-campus schedule with notations that certain courses will be given in the classroom on television. Students will have a freer choice as to whether or not they would like to have TV-in-classroom instruction. This arrangement will permit more valid comparisons of opinions of TV classroom groups assembled by voluntary selection and by arbitrary selection.

C. Social Science Questionnaire, Spring 1958

To secure the reaction of the on-campus teen-age students in regular courses toward television in the classroom, a special questionnaire was developed and given to all Social Science 101 students in May 1958. The first question asked whether or not these students planned to re-register for Social Science 102 in fall 1958. Seventy-one percent said yes, 13% no, and 16% were undecided out of a total of 317 replies. Of the number who said they would re-register in Social Science 102, 103 students or 45% said they would be willing to enroll in a TV-in-classroom course.

The questionnaires were administered by section teachers. There was a variation from class-to-class from a low of 21% of the students to a high of 68% of the students who said they would be willing to participate in an experiment taking Social Science 102 via television in the classroom.

TV-in-classroom sections were later scheduled and each attracted from 29 to 50 students on a voluntary basis. The interest of these volunteer students decreased as the semester went on; the interest was high at the beginning and relatively low at the end.

D. Certification of Student Identity

A plan was developed to check the possibility of persons other than registered students taking examinations. At the time of the final examination, a special grade card requesting certain information was given to each student without prior announcement. The student was asked to provide some item of information which could be checked against his TV master registration card filled out at the time of registration. A random sample of 147 students was taken from the branches of the Chicago City Junior College. A detailed study showed only one discrepancy, but this student had received an "F" grade in the course anyway.

It is now established procedure to make a similar audit at the close of every term, making a comparison of data given at times of registration and final examinations. This method does not disclose the fraudulent enrollment of a person who has assumed the name and personal credentials of another for purposes of providing an academic record for the second person. This kind of fraud is no more easily identified for those who enroll for conventional instruction.

E. Characteristics of TV Students, 1956-59

A percentage distribution of television students by age, education, residence, concurrent registration, and sex is presented in Table 25.

TABLE 25
PERCENTAGE DISTRIBUTION OF CHARACTERISTICS OF CREDIT TELEVISION STUDENTS BY SEMESTER, 1956-59

CHARACTERISTIC	SEMESTER					
	FALL '56	SPRING '57	FALL '57	SPRING '58	FALL '58	SPRING '59
AGE						
19 and under	6 %	5 %	4 %	7 %	5 %	9 %
20-29	27	27	30	31	31	33
30-39	36	35	34	30	35	32
40-49	23	25	24	25	22	19
50 and over	8	8	8	7	6	6
EDUCATION						
Less than H.S.	10 %	9 %	10 %	2 %	0 %	0 %
4 years of H.S.	65	49	51	57	58	46
1 year College	14	26	21	24	25	32
2 years College	7	8	10	7	9	10
3 or more years College	4	6	8	5	8	12
No data	--	2	--	5	--	--
RESIDENCE						
Chicago	96 %	97 %	93 %	93 %	94 %	97 %
Non-Resident	4	3	7	7	6	3
CONCURRENT REG'N						
Both TV and In-School	4 %	7 %	10 %	14 %	15 %	16 %
SEX						
Male	24 %	30 %	28 %	37 %	33 %	36 %
Female	76	70	72	63	69	63

An analysis of Table 25 shows that there has been a change downward in the age distribution of the TV credit students. The mean and median ages in each semester varied from 35 to 32 years. The trend to a lower mean age may be related to an increase in concurrent enrollment in classroom and TV courses by a younger group. The distribution by previous schooling shows a trend toward enrollment of people with higher educational attainment. Those with less than a high school education have almost completely dropped out of the program, and the number of people who have had some prior college experience has increased from about 25% to over 50%.

Most of the people registering for credit are residents of Chicago. Non-resident registrants vary from 3 to 7%. The major explanation for this low percentage is the tuition charge for those who live outside of the district of the Chicago City Junior College. A recent reduction in tuition for Illinois residents living outside of Chicago is expected to increase enrollments in this category in the future.[1]

The number of concurrent registrants has risen from 4% in fall 1956 to 16% in spring 1959. More TV students are registering for on-campus courses to complete their program for the Associate in Arts degree, and many on-campus students are now turning to TV to supplement on-campus programs. The number of concurrent enrollees is expected to increase as new plans are developed to encourage such enrollments.[2]

The number of men involved in the program has increased from one-fourth to one-third of the total registration.

The number of people interested in teaching has increased from 20% in fall 1956 to 27% in spring 1959.[3] In most cases these students are homemakers who have children in high school and college and who look forward to a new career in teaching when family responsibilities decline.

There is little variation in the way students learned about TV College. Approximately 50% of the people indicate that they learned about TV College by viewing Channel 11. Thirty percent of the credit students learned about TV College from the TV College information folder. Newspapers and word-of-mouth information account for most of the remainder of the responses on sources of information on TV College.

F. Non-Returning Students

An analysis was made of the records of 715 students who registered in television courses at the Wright Branch from fall 1956 through spring 1958 but who did not register for credit in the fall of 1958 to determine if there was any relationship between success and withdrawal.

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[1] The Chicago Board of Education now receives State Aid for Illinois Residents living outside Chicago amounting to $7.60 per credit hour, bringing the tuition charge to the student down to $9.00 per credit hour.

[2] Concurrent registration in the second semester of the fourth year (spring 1960) totaled 32%.

[3] The percentage of students interested in teaching has increased to 34% in spring 1960.

The students were divided into three groups:

1. Those who withdrew from all college work.
2. Those who withdrew from TV College but continued with on-campus courses.
3. Those who had enrolled in TV College and were graduated from the Chicago City Junior College.

Of the total of 715 students, 23% withdrew before completing one semester and therefore had no grade point average. An additional 58% withdrew before fall 1958, and their grades averaged 1.9 (2.0 equals C). Seven percent withdrew but continued with classroom work, and they earned a grade point average of 2.4. Approximately 2% graduated by fall 1958, and their grade point average was 2.75. Records could not be found for approximately 10% of these non-returning students. They withdrew before the official class lists were made.

These findings indicate that the more successful and more able students continue college work. Many people may have thought that telecourses were an easy road to a college education, and when they were disillusioned, they withdrew and did not continue college work.

Junior College counselors were asked to summarize interviews of enrolling television students. Many students claimed that TV offered them unexpected opportunity to return to college studies. Most students had been away from school for several years, had married, and had had families, or had had to accept other obligations that compelled them to postpone college work. Many who did withdraw from TV courses indicated to counselors that they had thought TV courses would require less work than classroom courses.

Most of those who succeeded with telecourses were eager to register for more courses the following semester. Counselors generally regard the TV student as a mature person with a sincere desire for self-improvement or for completion of earlier interrupted goals.

Another study was made of 189 Wright Branch students who were enrolled in telecourses in the fall of 1957 and who did not re-register for the spring of 1958. Of this number, 32, or 17%, requested that transcripts be sent to other schools. An additional 13, or 12% of those who did re-register in spring 1958, requested that transcripts be sent to other universities or places of business. Obviously, telecourse students do use their experience as a means of advancement in higher education and in some cases to certify self-improvement to employers who encourage educational attainment.

G. Special and Handicapped Students: Those to Whom Television Offers a Unique Opportunity

Television affords a means of offering regular college courses to many who might not otherwise be able to enroll. Handicapped and hospitalized persons have been served in increasing numbers. Twenty-five were enrolled in the first semester. Three years later the number had risen to 43. This group included those who were not able to attend one of the College branches for conferences.

Administratively, this group of students was given special consideration by being registered by mail under the supervision of a coordinator at the Wright Branch. Each had to secure the services of a professional person--teacher, minister, social worker, or similar responsible person--to serve as examination proctor. This proctor was certified and given instructions by mail and telephone by the coordinator. Examinations were returned by mail and graded by the TV teaching staff. In many cases, TV teachers checked on the progress of handicapped students by telephone conference or personal visit.

The handicapped students achieved an overall grade average of 2.93 (A=4, B=3, etc.) which is almost a "B" average. They registered for 817 credit hours, and 72% of all courses attempted were completed. There was an even distribution between the "A," "B," and "C" grades, only 4% "D's," and only one "F." As a group, the handicapped students' record of achievement was one of the highest of all groups involved in TV College.

Another group for which a unique service was given was the imprisoned student. In fall 1957, 17 students at the Women's Reformatory at Dwight, Illinois, were enrolled. These, too, were enrolled under the supervision of a coordinator. At the prison, a staff sociologist served as a liaison and as examination proctor. Assignments and examinations were mailed to the College for grading and annotation by the TV teaching staff. Since fall 1957, the number from Dwight has ranged from 11 to 14. It is the opinion of the administration of the Dwight Reformatory that there are significant rehabilitation values being achieved by this program.

In fall 1958, the program of serving imprisoned students was expanded to include the Stateville Prison for Men, at Joliet, Illinois. Because of the large number of applicants for this educational opportunity, eligible volunteers were given a series of examinations including the Otis Mental Abilities Test, a critical thinking test in social science, and various subject pretests and placement examinations. The fifteen inmates having the highest composite scores were allowed to register. These students enrolled in a prescribed set of courses as selected by the director of education for the prison. A special room was set aside to serve as a viewing room, library, and workroom with supervision arranged by the armed guards in the dining area. The academic success of this group in the first year led prison authorities to increase the number to twenty-five students in fall 1959.

Warden Joseph Ragen has declared that TV College has made a contribution to the rehabilitation program of the prison.[1]

Men students at Stateville Prison achieved a grade point average of 2.76, which is equal to a "B-" average. Out of a total of 285 credit hours of enrollment, 91% of the courses attempted were completed, one of the highest retention ratios for any group in TV College. No student received an "F" grade and only 11% received a "D" grade. One-fourth of all grades for these students was "A," a higher than normal percentage.

The women prisoners at Dwight did not do as well as the men at Joliet. Their grade point average was 1.38 (C=2.0). Their retention figure was as high or slightly higher than the Joliet people (92%), but almost one-fourth of all grades were "F" and only 6% were "A," a grade distribution lower than normal for TV students.

The difference in achievement of the two prison groups is probably related to the method of selection of students. The average age of the Stateville group is 28.7 years and of the Dwight group 29.6 years. The difference therefore cannot be attributed to an age or maturity difference. Experience with men and women enrolled in TV College would suggest that as groups men and women of the same ability level would not differ significantly in motivation. The battery of examinations used for student selection at Stateville very likely selected students of higher ability and achievement potential than the volunteer system of selection at Dwight.

During the three-year experiment, 177 different handicapped or special individuals enrolled for a total of 518 course registrations. In the first year, there were 91 course registrations; in the second, 162 course registrations; and in the third, 265 course registrations. A total of 65 proctors and 43 institutions were involved in this phase of the program.

H. Involvement of High School Students

Another unique service of TV College was the enrichment of experience of high school students enrolled in parallel courses or allied fields.

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[1] See Appendix 5.

Some of this viewing and learning was purely voluntary and student-initiated. Subjects often followed were mathematics, slide rule, physical science, biology, and Russian. Many of these students enrolled on a not-for-credit basis and followed the courses with great interest, even doing much of the assigned work.

In other cases, the participation was encouraged or required by high school classroom teachers. In a few cases, these teachers asked permission to administer the College examination to their high school group to evaluate progress by college standards.

In accord with established College policy, high school seniors were enrolled for credit when they were recommended by their high school authorities. In these cases, the college work was an extra course beyond the student's normal high school program and college credit was given for completed courses.

VIII. A LOOK AHEAD

At the end of the three-year experiment, the Chicago Board of Education decided to continue TV College even without outside financial assistance. (During the experiment, assistance from the Fund for the Advancement of Education amounted to $475,000 or 43% of the total direct costs for television instruction.) In the spring of 1960, its eighth semester, TV College presented fifty-one periods of college instruction per week.

During this fourth year, new developments, many of them consequences of the experience of the first three years, occurred in the operation of TV College and in the plans for further research.

A. New Developments in the Operation of TV College

The most important new developments in the operation of TV College are concerned with encouraging concurrent enrollments in classroom and television courses, facilitating the use of television instruction in the classroom, simplifying registration procedures, using video-tape recordings to reduce costs and improve scheduling, and extending the facilities of TV College to superior high school students.

To encourage concurrent enrollments in classroom and television courses, a common time schedule has been established in all six branches of the City Junior College for scheduling all classroom courses, and the schedule of TV courses has been coordinated with this classroom schedule. All television courses are listed on the regular printed program of classroom offerings at each branch. Also, viewing rooms have been set up in each branch to serve students concurrently enrolled in television and classroom courses. In the smaller branches, library space is used with earphone reception of sound. In this way, students can take television courses and classroom courses immediately following each other.

To further encourage concurrent enrollments, the schedule of conference and examination section meetings has been built around the new common classroom and broadcast time schedule. The new plan continues section meetings at two centers, Wright and Wilson. Each course has section meetings on Wednesdays and Fridays. By alternating cycles of meetings, it is possible to arrange student schedules including as many television courses as desired without conflicts between section meetings, between section meetings and telecasts, or between section meetings and classroom courses. Also, the new plan reduces the number of section teachers by permitting one teacher to handle two or three sections. This, in turn, eases the task of coordinating section teachers and improves the quality of instruction in the sections.

The use of television in the classroom has been facilitated by the introduction of forty-five-minute telecasts, reducing the number of telecasts per week for a three-credit-hour course from three to two. This reduction makes possible a combination in the classroom of two forty-five-minute telecasts and one hour of follow-up instruction. This system has been used for courses with objectives primarily of the non-skill types. However, plans call for its adaptation to English 101, using the extra classroom hour as a laboratory session. Also, the twice-a-week system has been appreciated by TV-at-home students, especially those following the evening series.

Registration procedures have been simplified, and the time required for registration has been shortened. An advanced registration for returning TV students is held before the regular registration period. With the reduction in research, pretesting procedures have been simplified. Service has been improved for all students by centralizing in two branches the registration of those who wish to register only in TV courses. These two branches are Wright on the North Side and Wilson on the South Side. Those wishing to enroll concurrently in classroom and TV courses may still enroll in any of the six branches.

The video tape method of recording lessons was introduced in the spring of 1960. This method reduces the time delay necessary for repeat broadcasts in new series from seven to two days. The two-day delay is used in preference to same-day rebroadcast from tape in order to allow time for remaking of a tape in the event there is equipment failure at the time of the first live broadcast with simultaneous video-tape recording. Since the video-tape system permits recovery of recording tape, it is predicted that in future semesters the percentage of new live courses can be increased from one-half of the number of courses broadcast to three-fourths of the courses broadcast without an increase in broadcasting costs. This can increase enrollments because of the greater variety of courses which can be presented each term.

The facilities of TV College have been extended to high school juniors and seniors who are recommended and approved by their high school principals as part of a program of accelerated education for gifted students. These pupils carry college (classroom or television) courses in addition to a normal high school load and receive credit from the College. In some cases, high school principals also permit this work to earn high school credit toward graduation. This involvement of superior high school students is modest at present but could develop into a significant educational service.

B. Plans for Further Research

Further experimentation and research may be directed along these lines:

1. The preparation of and experimentation with courses in new subject areas, including the development of new kinds of learning materials where needed.
2. The development of research designs to evaluate achievement in television students of such objectives as interests, attitudes, critical abilities, and skills. The development of new learning materials and instructional methods appropriate to TV instruction designed to direct learning toward such objectives constitutes an important contribution to the science of education.
3. Experimentation in aids for self-directed study, such as learning machines, to further exploit the students' initiative in learning. If carefully prepared "programs" for self-learning could be integrated with television instruction, achievement might be enhanced by the increased interaction of the student with the learning situation.[1]
4. Follow-up studies of the TV populations to secure information on the number of students who began college careers via television and continued to higher degrees, the success of these students after transfer to other institutions, the extent to which TV instruction has aided careers and afforded opportunity for job advancement, and the value of telecourses for not-for-credit students and non-enrolled viewers.
5. Sociometric studies of the economic, social, and cultural status of the entire population served by WTTW. Comparisons may be made of data secured for non-registered viewers of TV College telecasts, for enrolled not-for-credit students, and for credit students. There is little data of this kind in the literature of instructional television.
6. Continued analysis of the avenues of communication which bring knowledge of TV College services to potential viewers and students. This study may provide data useful in planning future efforts to promote TV College. These efforts may stimulate increased enrollments and thus reduce unit costs.
7. Follow-up studies of the handicapped and special student populations. Depth interview techniques could be utilized to probe the attitudes and goals of such persons.

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[1] Work has already begun on "programming" a portion of English 101 for self-learning. After extensive experimentation with classroom instruction, this new material will be coupled with television instruction.

(At the time of this writing, a graduate student at Loyola University is making a study of special students of TV College with a view to preparing a dissertation for an advanced degree.)

8. Detailed follow-up studies of withdrawals of credit students. Although the retention has averaged 66% of original enrollment, there are variations from course to course. In some fields, improved procedures for intercommunication with students apparently have improved retention. Studies in other subjects with other techniques may reveal factors of importance in improving retention.
9. Studies to enhance the service of TV College as a vestibule to the teaching profession. Many homemakers between the ages of 30 and 45 have enrolled in TV College as a first step into the teaching profession. These individuals are highly motivated, and do excellent work. Approximately 50% of the graduates of the Chicago City Junior College who have taken some work by television plan to go into teaching. More detailed studies may reveal new facets of service in this important area.
10. A study of the values of TV College as a catalyst for curriculum development and improvement of teaching. Teachers participating in TV College have stated that the professional growth they have experienced in the thorough preparation and presentation of telecourses has helped them in their careers. Departmental faculties have in many cases adopted for classroom use the new outlines and plans developed in cooperation with the TV teaching staff. A more thorough investigation of this whole area of in-service professional growth for teachers may establish a value of TV College not measured by enrollment statistics.

The experience of the three years 1956-59 gives assurance that as TV College is continued the following benefits for the Chicago City Junior College and for the Chicagoland community can be expected:

1. An increased interest in classroom instruction by adults who acquire through television instruction a new interest in learning.
2. Continuing development of means for stimulating self-directed learning, the resource for which is within the student himself.
3. The opening of new frontiers in learning materials and instructional procedures.
4. The discovery of new prospects to fill the ranks of the teaching profession, particularly women who have declining responsibilities as mothers and homemakers.

5. The continuation of opportunities for refinement of course and lesson objectives and outlines with attendant values for curriculum development and professional growth of participating teachers.
6. The widening of involvement of faculty members in development of valid and reliable evaluation instruments and in participation in educational research by shaping of research designs and by collection, evaluation, and interpretation of pertinent data.

APPENDICES

1. Bulletin of Important Information for Credit Television Students
2. Important Bulletin #2 to Credit Television Students
3. Faculty Application for Participation in the Preparation and Presentation of Television Courses
4. Assignment Mail-In Sheet
5. Statement by Warden Joseph E. Ragen

APPENDIX 1:

TV COLLEGE

IMPORTANT INFORMATION FOR CREDIT TELEVISION STUDENTS

FEBRUARY 1960

CHICAGO CITY JUNIOR COLLEGE
SPRING SEMESTER 1960

I. INTRODUCTION

You are a regularly enrolled student in one of the branches of the Chicago City Junior College. This means that you have available to you all of the college services, including counseling and library service.

This bulletin summarizes some of the most important information you should know as a regular college student. More complete information on college policies is available in the 1959-60 bulletin of the Chicago City Junior College.

II. RECORD YOUR SECTION LETTERS HERE AT TIME OF REGISTRATION

Your section letter must be entered on assignments and examinations.

COMPLETE THIS BOX AT TIME OF REGISTRATION

BIOLOGY 102 Sec.___
BUSINESS 120 Sec.___
BUSINESS 121 Sec.___
ENGLISH 102 Sec.___
HUMANITIES 201 Sec.___
LITERATURE 117 Sec.___
MATHEMATICS 103 Sec.___
POLITICAL SCIENCE 223 Sec.___
SOCIOLOGY 145 Sec.___
SPANISH 101 Sec.___

III. DIRECTORY OF SOURCES OF INFORMATION

See the TV College Information Folder for information on:
- Schedule of lesson topics
- Condensed telecast schedule
- List of textbooks and bookstores

See the Chicago City Junior College Bulletin for information on:
- Curricula
- Graduation requirements
- Educational policies
- Withdrawal procedure (Also see Sections XI through XIV of this bulletin)

Write to the registrar in the branch of your enrollment for:
- Withdrawal from classes (See Section XII below)
- Application for graduation (See Section XVIII below)
- Transcripts of credits
- Information on your permanent record of grades and credits
- Copies of the Chicago City Junior College Bulletin

Telephone the counseling office in the branch of your enrollment for:
- Appointments to see a teacher-counselor about curriculum, course choices, vocational guidance, etc.

Call the section teacher:
- If you have missed an examination
- If you have a conflict in examinations
- If you want information on assignment and examination results

See other sections of this memo for:
- Telephone conference hours of TV teachers (Section VIII)
- Telephone conference hours of section teachers (Section IX)
- Midterm examination and conference schedule (Section V)

IV. ADDRESSES AND TELEPHONE NUMBERS OF THE BRANCHES

Amundsen
5110 North Damen Avenue
LO 1-9861

Fenger
11220 S. Wallace Avenue
PU 5-5347

Crane
2250 West Van Buren St.
HA 1-6994

Wilson
6800 South Stewart Ave.
AB 4-8835 (until 4 p.m.)
AB 4-5435 (after 4 p.m.)

Southeast
2100 East 87th St.
RE 1-5185

Wright
3400 North Austin Ave.
SP 7-7900

V. YOU ARE RESPONSIBLE FOR KEEPING YOUR EXAMINATION AND CONFERENCE APPOINTMENTS

EXAMINATION & CONFERENCE SCHEDULE SPRING 1960
(WRIGHT & WILSON ONLY)

SUBJECT	SEC. A WED. 7:15-8:15	SEC. B WED. 8:25-9:25	SEC. C WED. 7:15-8:15	SEC. D WED. 8:25-9:25	SEC. E FRI. 7:15-8:15	SEC. F FRI. 8:25-9:25	SEC. G FRI. 7:15-8:15	SEC. H FRI. 8:25-9:25
BIOL. 102								
Conf. #1	March 9	March 9				March 11		
Exam. #1	March 23	March 23				March 25		
Conf. #2	April 6	April 6				April 8		
Exam. #2	April 20	April 20				April 22		
ENG. 102								
Conf. #1			March 16	March 16				March 18
Exam. #1			April 13	April 13				May 6
Conf. #2			May 4	May 4				May 20
HUM. 201								
Conf. #1	March 9	March 9			March 11			
Exam. #1	March 23	March 23			March 25			
Conf. #2	April 6	April 6			April 8			
Exam. #2	April 20	April 20			April 22			
LIT. 117								
Conf. #1							March 18	March 18
Exam. #1							April 1	April 1
Conf. #2							May 6	May 6
Exam. #2							May 20	May 20
MATH. 103								
Conf. #1					March 11	March 11		
Exam. #1					March 25	March 25		
Conf. #2					April 8	April 8		
Exam. #2					April 22	April 22		
POL. SCI. 223								
Conf. #1			March 2	March 2			March 4	
Exam. #1			March 16	March 16			March 18	
Conf. #2			April 13	April 13			April 1	
Exam. #2			May 4	May 4			May 6	
Conf. #3			May 18	May 18			May 20	
SOCIOLOGY 145								
Conf. #1							Feb. 19	Feb. 19
Exam. #1							March 18	March 18
Conf. #2							May 6	May 6
Exam. #2							May 20	May 20
					NOTE: SPECIAL HOURS			
					6:35-8:15	8:20-10:00 p.m.		
BUS. 120 and 121								
Conf. #1					March 4	March 4		
Conf. #2					March 25	March 25		
Conf. #3					April 8	April 8		
Exam. #1					April 22	April 22		
Conf. #4					May 13	May 13		
Conf. #5					May 27	May 27		
SPAN. 101								
Conf. #1					Feb. 19	Feb. 19		
Conf. #2					Feb. 26	Feb. 26		
Conf. #3					March 11	March 11		
Exam. #1					March 25	March 25		
Conf. #4					April 8	April 8		
Conf. #5					April 22	April 22		
Exam. #2					May 13	May 13		
Conf. #6					May 27	May 27		

VI. HOW TO RECEIVE EXAMINATION GRADES

If you wish to receive grades for the examinations, bring a self-addressed, stamped envelope to each examination.

Turn in this envelope with your examination to your section teacher at the close of the examination period.

VII. MARKING SYSTEM

The following letter grades and quality points will be used in computing the grade point average:

MARK	MEANING	GRADE POINTS
A	Excellent	4
B	Good	3
C	Fair	2
D	Minimal Passing	1
F	Failure	0
R	Incomplete	None
W	Withdrawn	None

The grades R and W will not be used in computing the grade point average. Any R grade not made up in accordance with the rules governing incompletes will thereafter be considered a failure and utilized in computing grade point averages.

To determine the grade point average, multiply the total semester hours of A, B, C, D, F by the appropriate grade points; add the products and then divide this sum by the total number of semester hours involved.

VIII. TELEPHONE CONFERENCES WITH TV TEACHERS

Telephone your TV teacher for answers to questions about:
The content of teleclass lessons, study guides, or readings
The assignments (what they are and when they are due)

Please formulate your questions carefully before you call your teacher. Try to realize that other students may be waiting to speak to your teacher. Please limit your calls to the appointed hours below:

SUBJECT	TIME	PHONE NO.	INSTRUCTOR
Biology 102	1:30 - 2:30 pm Tues., Thurs.	SP 7-7900	Cordier
General Course			
Business 120 and 121	4:45 - 5:30 pm Mon.	MU 4-3800	English
Pitman Shorthand	7:00 - 7:45 pm Thurs.	SP 7-7900	English
English 102	2:00 - 3:00 pm Mon.	SP 7-7900	Zigerell
Composition	2:30 - 3:30 pm Thurs.	SP 7-7900	Zigerell
Humanities 201	11:00 - 11:50 am Tues.	AB 4-3900-Ext. 43	Cook
General Course	10:00 - 10:50 am Friday	AB 4-3900-Ext. 43	Cook
Literature 117	7:30 - 8:15 pm Tues., Thurs.	MU 4-3800	Queenan
American Literature			
Mathematics 103	7:00 - 7:30 pm Wed.	SP 7-7900	Malina
College Algebra	12:30 - 1:00 pm Thurs.	SP 7-7900	Malina
Political Science 223	4:00 - 4:45 pm Tues.	MU 4-3800	Geisler
National Government	5:00 - 5:45 pm Thurs.	MU 4-3800	Geisler
Sociology 145	8:00 - 8:45 pm Wed., Thurs.	BE 5-6072	Haimowitz
Human Relations			
Spanish 101	7:15 - 8:00 pm Mon., Thurs.	MU 4-3800	Donnell
Elementary Course			

IX. TELEPHONE CONFERENCES WITH SECTION TEACHERS

Write or telephone your section teacher (whom you will meet at the first examination or conference) for answers to your questions about
Grades on homework assignments
Grades on examinations

You will receive a post card from your section teacher approximately two weeks after the semester begins giving you his telephone number and hours.

Allow at least two weeks to receive grades. Bring a self-addressed, stamped envelope to each examination.

X. PROCEDURES FOR MAILING ASSIGNMENTS

Written assignments should be mailed in accord with the specific instructions given by the TV teacher. Assignments are to be retained, brought to examination rooms, mailed to section teachers, or mailed to a common grading center, in accord with specific instructions given by the television teacher.

XI. IF YOUR WORK LOAD IS TOO HEAVY, REVISE YOUR PROGRAM

If you find that you must withdraw from a course, please make the decision as early as possible, and send a letter or card to the registrar of the branch of your enrollment asking for official withdrawal.

You may withdraw from part of your program before March 25 and receive a "W" grade. After this date, no part program revisions are allowed. However, you may withdraw officially from your entire program at any time up to the 12th week of school, April 22, and you will be marked withdrawn. If you do not officially withdraw from a class or if you fail to continue in a class, you will receive an "F" grade.

XII. HOW TO WITHDRAW YOUR REGISTRATION FROM ONE OR MORE CLASSES

If you feel compelled by circumstances to withdraw from part of your program prior to March 25 or all of your program prior to April 22, it is your responsibility to write a letter to the registrar of the branch of your enrollment, giving these items of information:

1. Your name in full, and address.
2. The name, number and section letters of each course from which you wish to withdraw.
3. Your specific reason for withdrawal.

XIII. REFUNDS TO WITHDRAWN STUDENTS

The general service and laboratory fees for television courses will not be refunded to students who withdraw after classes begin. No more than one-half is refunded to a student who withdraws before classes begin.

Tuition refunds:
Complete refund up through Feb. 26
Three-fourths (3/4) refund - February 29 through March 11
One-half (1/2) refund - March 14 through March 25
No refunds after March 25

XIV. SCHOLASTIC PROBATION AND "DROP" POLICIES

Students carrying more than one course who do not maintain at least a grade point average of 1.00 (D) shall be excluded. Students earning at least a 1.00 grade point average but less than a 1.50 grade point average shall be placed on scholastic probation. In the following semester students on scholastic probation must raise their grade point average to 1.50 or be dropped for poor scholarship.

For students carrying only one course, a grade of (D) or (F) shall place the student on scholastic probation. A student on scholastic probation who receives a grade of (D) or (F) for the current semester shall be excluded.

Students who earn no credit in two consecutive semesters shall be excluded.

XV. HONORS

If your grade point average is 3.0 (B) or better, you may be placed on the Dean's Honor List. Details are available at the branch of enrollment.

XVI. INFORMATION FOR VETERANS ON THE "G.I. BILL"

The Veterans Administration will now allow veterans receiving benefits on the "G.I. Bill" to include TV College courses in their program. The major portion of the veteran's program, however, must be taken in the classroom.

The particular rulings are as follows:

For a half-time program of 7 hours: four hours must be in classroom courses and three hours may be in TV College. In a three-quarter time schedule: six hours must be in classroom work and four hours may be in TV College. For a full-time program: eight hours must be in classroom work and six hours may be in TV College.

A veteran on the "G.I. Bill" enrolled in TV courses must personally sign a weekly attendance sheet. He must also secure once each month the signatures of his section teachers certifying satisfactory progress.

Each veteran should secure complete information on these regulations from the branch Veterans' Counselor at the time of registration.

XVII. OTHER BULLETINS YOU WILL RECEIVE BY MAIL

You will receive by mail a final bulletin for the term, including these items:
- Final examination schedule
- List of courses to be offered in Fall 1960
- Registration dates and times for Fall 1960

In August you will receive by mail the eight-page information folder for the Fall 1960 program.

XVIII. PROCEDURE FOR APPLICATION FOR GRADUATION

The Chicago City Junior College awards the Associate in Arts degree or the Diploma of Graduation to those who meet graduation requirements. Graduation is not automatic; the student must make formal application for graduation. The registrar of the branch of enrollment must make an analysis of the student's record and certify eligibility for graduation.

Students are eligible for graduation on satisfactory completion of sixty academic semester hours of credit (of which a minimum of 15 hours must be earned in the Chicago City Junior College) as follows:

COURSES	SEMESTER HOURS
English 101 and one other course in communications	5 or 6
Social Science 101, 102	6
Biology 101, 102 or 111, 112	6 or 8
Physical Science 101, 102	6
Humanities 201, 202	6
Electives	28 or 31

Electives may be chosen, with the assistance of counselors, from any courses described in the Chicago City Junior College Bulletin for which the student has proper prerequisites.

Students who entered the Chicago City Junior College for the first time in September 1957 and thereafter will be required to maintain an average grade of "C" (2.00 grade point average) in the academic courses presented for graduation in the requirements for the Associate in Arts degree. All courses submitted must be numbered 101 or higher. Students who successfully complete the required sixty hours but do not maintain a "C" average will receive a diploma. Students who entered the Chicago City Junior College for the first time prior to September 1957 must meet graduation requirements in force at the time of entrance.

Any student who successfully completes any of the two-year curricula listed on pages 24 through 53 of the Bulletin will be graduated.

In accordance with Chapter 112, paragraph 27-3, Illinois Revised Statute (1953), all students will be required to receive a passing grade on a special examination on the Constitution of Illinois, the Constitution of the United States, and the Code of the American Flag. This is included in the Social Science 102 course.

If you think that with the successful completion of your current program, you will meet the graduation requirements listed above, please forward the form below to the registrar of the branch of your enrollment.

- - - - - - - - - - -

APPLICATION FOR GRADUATION

TO: REGISTRAR

To be filed not later than February 29, 1960

________________________ BRANCH
Chicago City Junior College

I have read the above requirements for graduation and believe that I may qualify for graduation in June 1960.

In addition to the work I am taking with you on Television this semester, I have taken college work at the following schools:

1. ________________________
2. ________________________
3. ________________________
4. ________________________

☐ My transcripts of high school and other college credits are on file in your office.

☐ You do not have transcripts, but I am having them sent to your office at once. (It is the student's responsibility to request all schools and colleges previously attended to mail transcripts of academic records to the Registrar of the appropriate branch.)

____
DATE

____
STUDENT'S NAME

____
ADDRESS

Please PRINT your full name as you want it on your diploma:

____

APPENDIX 2:

IMPORTANT BULLETIN #2 TO CREDIT TELEVISION STUDENTS

Chicago City Junior College

May 20, 1960

I. TV FINAL EXAMINATION SCHEDULE
(Wilson and Wright)

DATE	SUBJECTS - ALL SECTIONS	TIME
Thursday, June 9	Business 120-21	6:00 - 8:00 p.m.
	Biology 102 & Controls	6:00 - 8:00 p.m.
	English 102	8:10 - 10:10 p.m.
Friday, June 10	Sociology 145	6:00 - 8:00 p.m.
	Humanities 201 & Controls @ Wilson	8:10 - 10:10 p.m.
Monday, June 13	Mathematics 103	6:00 - 8:00 p.m.
	Political Science 223	8:10 - 10:10 p.m.
Tuesday, June 14	Literature 117	6:00 - 8:00 p.m.
	Spanish 101 & Controls	8:10 - 10:10 p.m.

NOTE: To resolve conflicts or to make up a missed examination, contact the TV Coordinator at Wright (Mr. Clements - Sp 7-7900) or at Wilson (Dr. Skipper - Ab 4-5435) AND MAKE A NEW APPOINTMENT.

GRADE REPORT: In order to receive your final mark for the semester, bring to each examination a self-addressed stamped envelope and give it to your instructor.

II. COURSES TO BE OFFERED IN FALL 1960

SUBJECT	DAY	EVENING
Business 271-Intro. to Personnel Work in Industry	3:45-4:30 M.W.	7:00- 7:45 M.W.
Anthropology 201-General Anthropology	3:45-4:30 T Th.	7:00-7:45 T.F.
Education 151-American Public School	3:00-3:45 M.W.	10:30-11:15 M.W.
German 101-1st Elementary Course	1:30-2:00 M.W.Th.	6:30- 7:00 M.W.Th.
Humanities 202-General Course	2:00-2:30 T.W.F.	6-6:30T.Th; 6:30-7F
Humanities 205-World Literature	3:00-3:45 T.Th.	10:30-11:15 T.Th.
Music 130-Music Appreciation		5:30-7T; 7-7:30 Th.
Physical Science 101-General Course	1-1:30 T.Th; 2-2:30 M	6:00-6:30 M.W.F.
Social Science 101-General Course	2:30-3:00 T.W.F.	8:30-9T.Th; 9-9:30 Th.

III. REGULAR REGISTRATION - FALL 1960

Registration for former TV students will be held on Friday, September 9, at 6:30 p.m.
Registration for new TV students will be held on Tuesday, September 13, and Wednesday, September 14, at 6:30 p.m.
Registration will be held only at the Wright and Wilson Branches.
At Wilson, report to Room 313A (Arts Building).
At Wright, report to Room 323.

IV. CONCURRENT REGISTRATION

CONCURRENT REGISTRATION - A student may register for both TV and on-campus courses. Maximum credit hours permitted in total program are 16 hours.[1] A student carrying 9 or more hours must include the required proportion of General Education courses as specified on page 20 in the Chicago City Junior College Bulletin. The Registrar, Director of Counseling, or their representative must approve all concurrent registrations.

Registration for on-campus classes will take place at all six branches of the City Junior College from September 7 to September 14, 1960.

Write to the nearest branch for a copy of the class schedule and registration information.

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[1] Approval of Registrar or Director of Counseling necessary to go beyond maximum combined load.

APPENDIX 3:

FACULTY APPLICATION FOR PARTICIPATION IN THE PREPARATION AND PRESENTATION OF TELEVISION COURSES

March 16, 1960

MEMO TO: ALL FACULTY MEMBERS, CHICAGO CITY JUNIOR COLLEGE

You are invited to use the attached form to apply for participation in the preparation and presentation of television courses in the school year 1960-61.

We would appreciate, too, your suggestions concerning new courses to be offered by television and your recommendation of colleagues as potential studio teachers.

On the attached form is an initial listing of courses which will be supplemented by your suggestions for new course offerings. The final schedule will be based on the following considerations:

a. Suggestions from the faculty

b. The curricular and course choices of TV College students. (Thirty percent are in pre-teaching curriculum.)

c. The balance of courses by curricular areas

d. The involvement of departments in such a way that staffing for television provides minimum disruption of regular staffing procedures and budgets

e. Experimentation with new subject areas which might attract and hold new television students

f. Optimum relationships between cost and expected enrollments to justify the offering by television

g. The offering of one year sequences in required basic courses and only the first semester of one year elective sequences. (Television students are invited to continue elective sequences by classroom instruction)

Please complete the attached form and forward it direct or through your dean to reach the TV Office at 3400 North Austin Avenue by March 30, 1960.

Clifford G. Erickson
Dean of Television Instruction

TO: Clifford G. Erickson
3400 North Austin Avenue
Chicago 34, Illinois

PLEASE FORWARD TO REACH TV OFFICE
BY MARCH 30, 1960

1. This will express my willingness to serve in the preparation and presentation of television courses in the period 1960-61. I understand that this involves full-time work for Summer 1960 and that it in no way disturbs my priority for future teaching in summer sessions if I should be chosen for this TV assignment.

I am interested in the courses checked in the listings below:

☐ FALL 1960 (tentative)
Humanities 202 (Kine)
☐ Physical Science 201 (Kine)
☐ Business 271-Personnel Management (Prepared)
☐ Social Science 101
☐ French 101
☐ History 112-1865 to Present
☐ Arts 150-Art Crafts
☐ Education 151-American Public School
☐ First Aid 131
☐ ____________________
☐ ____________________
☐ ____________________

☐ SPRING 1961 (tentative)
Social Science 102 (Kine)
☐ Physical Science 102 (Kine)
☐ Psychology 201
☐ German 101
☐ Economics 233-Principles of Economics
☐ Music 111-Fundamentals of Music
☐ Humanities 205-World Literature
☐ Accounting 101
☐ ____________________
☐ ____________________
☐ ____________________

2. ☐ I have other plans for Summer 1960. I would prefer to do summer television work in 1961. My preferences are checked above.

3. I recommend the following colleagues as potential studio teachers:

Teacher____________________ Course(s)____________________

Teacher____________________ Course(s)____________________

Teacher____________________ Course(s)____________________

Signed____________________ Branch______________ Date______________

APPENDIX 4:

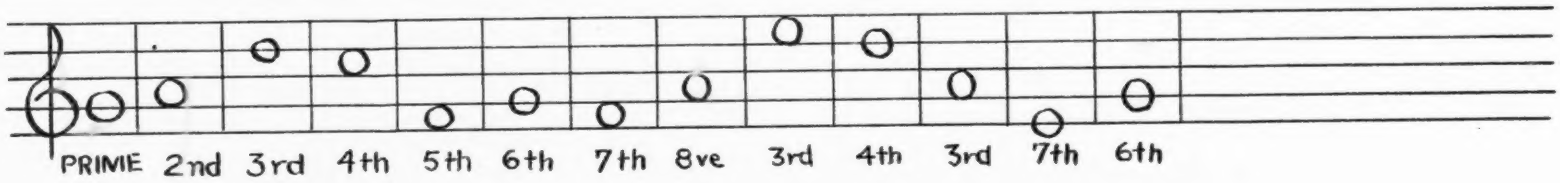
ASSIGNMENT MAIL-IN SHEET

MUSIC 111 -- ASSIGNMENT "G"

1. Counting up from the note F

a basic Prime is _________;
a basic Second is_________;
a basic Third is _________;
a basic Fourth is_________;
a basic Fifth is _________;
a basic Sixth is _________;
a basic Seventh is_________;
a basic Octave is _________;

2. Add the additional note above to complete the basic interval for each given note:

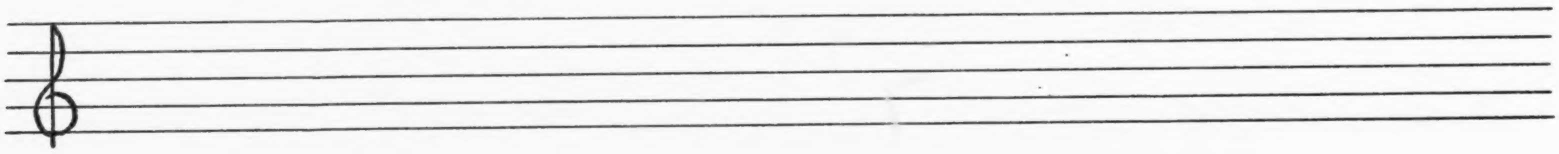


3. Name the correct note. Fill into space.

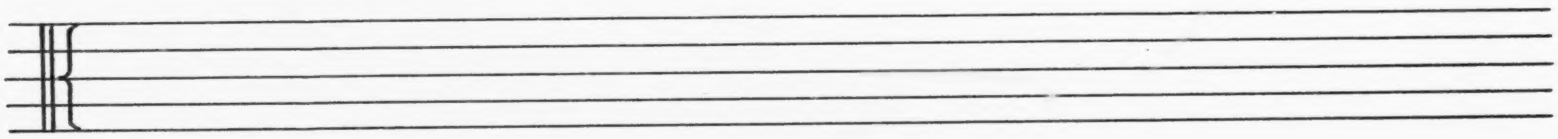
A half step from A is _____ above; and_____below
A whole step from A is _____ above; and_____below
A half step from B is _____ above; and_____below
A whole step from B is _____ above; and_____below

4. Write out the chromatic scales (ascending & descending) as follows:

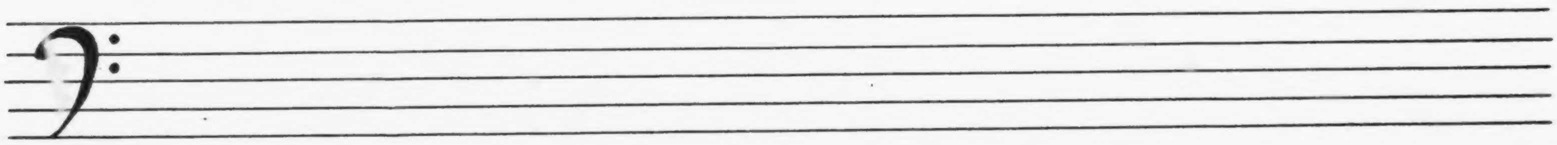
a. starting on E



b. starting on F



C. starting on G



BACK OF ASSIGNMENT MAIL-IN SHEET

From: ____________________

____

____

Section: Music 111 ____

Place 4¢
Stamp
Here

TV MUSIC 111

Chicago City Junior College
Southeast Branch
2100 East 87 Street
Chicago 17, Illinois

Address Form A

- -

DIRECTIONS

1. Fill out Address Form A. Following your name and address include the section number of the course according to your branch of enrollment:
    - Music 111-A-E-1 for Amundsen
    - Music 111-WR-E-1 for Wright
    - Music 111-C-E-1 for Crane
    - Music 111-W-E-1 for Wilson
    - Music 111-SE-E-1 for Southeast
    - Music 111-F-E-1 for Fenger
2. Fill out Address Form B with your name and address.
3. Affix 4¢ stamps as indicated.
4. Fold paper so that address of TV MUSIC 111 (Address Form A) is outside. then seal.
5. Mail on or before due date.

- -

From:

TV MUSIC 111

CHICAGO CITY JUNIOR COLLEGE
2100 East 87th Street
Chicago 17, Illinois

Place 4¢
Stamp
Here

To: ____________________

____

____

Address Form B

APPENDIX 5:

STATEMENT BY WARDEN JOSEPH E. RAGEN

THE STATEVILLE TV COLLEGE

When the Chicago City Junior College announced, in the fall of 1956, that full credit college courses leading to an Associate in Arts degree would be offered via open-circuit television, Warden Ragen and Mr. Givens, the Superintendent of Education at Stateville, set about devising a plan whereby the two-year program could be made available to qualified inmates of this institution.

After more than a year of negotiation with officials of the Chicago City Junior College, Warden Ragen succeeded in arranging for the enrollment of such men as could satisfy the residence and minimum academic requirements of the Chicago Board of Education. But even then there were many problems to be solved before the program could be put into operation. Not the least of these was the need for determining how the college program, which required that students be able to view television at night, could be made to fit in with the security policy of the institution.

It was not until the fall of 1958 that a solution of this problem presented itself. Warden Ragen arranged to have two large cells vacated and fitted out to accommodate the prospect students. Television sets and other necessary schoolroom paraphernalia were installed and lighting circuits were modified to permit individual control of the lights in those two cells. This made it possible for the students to live and work right in their classrooms and to view required programs, no matter how late they might be telecast, without presenting a security problem. The timely solution of this problem permitted a pilot group of twelve men, selected on the basis of competitive examinations, to be officially enrolled with the Chicago City Junior College for the fall semester of 1958.

A curriculum consisting of courses in English, social science, physical science and humanities was selected for the initial semester. Written assignments, the number varying with the course, were prepared on the basis of assigned reading and the television lectures. All assignments were mailed to the Wright Branch of the Chicago City Junior College for grading. Midterm and final examinations were prepared by the Junior College and mailed to Mr. Givens at Stateville, who proctored all examinations. It is gratifying to report that, with the exception of two men who were dropped from the program for disciplinary reasons, all the men assigned to the TV College completed their first semester's work with an overall performance that rated above the average.

Only one additional student was admitted for the spring semester of 1959 because facilities had not yet been expanded in proportion to the increased interest in the program. Courses for this second semester included mathematics, physical science, astronomy, Russian, and business. During the second semester only one man was eliminated for disciplinary reasons. Again, the overall performance of the students was above average.

By the end of the semester, inmate response to the program was such that Warden Ragen decided to expand the facilities so that at least twenty additional men could be accomodated. Plans for this expansion went into effect during the summer vacation following the spring semester of 1959, at which time numerous problems immediately presented themselves. A crash program had to be instituted to clear out, pave, and otherwise make habitable the basement of Cellhouse "E." A stairwell had to be cut through the floor of the cellhouse "flag." Lighting and plumbing, articles of furniture, and a research library had to be installed, and the necessary security precautions taken.

But even after the completion of the basement classroom, it was found that not all of the problems had been overcome. As soon as the television sets were installed, it was discovered that the accoustical resonance of the basement made it impossible to hear the telecasts. This problem was solved, however, by Lieutenant McKnight, of the Vocational School of the institution, who devised a system of head-phone connections which allowed the students to listen to telecasts over their head-phones.

Finally, with the excellent cooperation of the M & M Shop and the Yard Detail, as well as the Vocational School, the fall semester of 1959 began on schedule with twenty-five students--nine of the original group and sixteen "freshmen." The curriculum was now expanded to include ten subjects--two courses in business, two in mathematics, and one each in philosophy, literature, reading, biology, English, and Russian. Each student was obliged to take at least four subjects from this group, most of the students, however, choosing five, and a few, six. One course, Business 255, was scheduled for late evening, Warden Ragen permitting those students enrolled to attend after evening lockup.

No other prison in the country, it is believed, has a similar or as ambitious a program for college work. The men enrolled have maintained good conduct both during and out of classes in appreciation for this exceptional and unique educational opportunity. As in the previous two semesters, the group as a whole has maintained a better than average grade score. Three or four of the men have been told by Mr. Leslie Van Marter and Dr. Austin Wright, TV instructors who have twice conducted question sessions for the group at Stateville, that their papers and test grades were among the top two or three of all students enrolled in their courses.

In view of the undeniable success of the TV program at Stateville, what began as an experiment a year and a half ago has now become an integral part of the institution's program of rehabilitation. An additional body of men is presently undergoing qualification tests for admittance to the group in the February to June term of 1960. In June of 1960, an event will take place that will in some measure encourage and assure Warden Ragen and the administration that their efforts have not been in vain. Six of the men, five in Stateville and one recent parolee who will finish his courses on the outside, will graduate from the Chicago Junior College. Although the five will not be able to attend the graduation ceremony, on the records of the Chicago Junior College they will be as much a part of the graduating class of June 1960 as they would if they had been present in caps and gowns. Thus their absence from the ceremony will be the only way in which they will be distinguished from their classmates on the outside. One thing is certain, however: their smiles at that time will be wondrously wide.

Joseph E. Ragen
Warden

NOTE: A special graduation ceremony was conducted at the Stateville Penitentiary on June 24, 1960. Dean Masiko and Dean Clements conducted the ceremony in caps and gowns.